

CHAPTER V

INDUSTRIES

The Uttara Kannada District is richly endowed with bountiful wealth of forest produce, and mineral and marine resources. But it remained industrially backward. To accelerate the tempo of industrial development, the district has been declared as industrially backward and thus qualifying itself for a number of special concessions and incentives offered by the Central and State Governments and financial institutions. The proposed Integrated Area Development Programme for the Western Ghat Region is also expected to confer some benefits to the industrial development of the district.

The intensive efforts undertaken by the Governments to boost the industrial growth in the District, have started bearing fruits and the district is now on the threshold of industrial development. Among the agro-based industries, rice mills, *khandasari* sugar units, cashew and pineapple processing factories, marine industries like boat building, fish oil, freezing plants, salt manufacturing, etc., are important. The saw mills, ship building, plywood and match wood, paper mills, and some village and cottage industries are the forest-based industries. Ferro manganese and silicon manganese manufacture, caustic soda, limestone and cement pipes are some of the mineral-based industries in the district.

In 1981, 11,009 persons were engaged in various factories and small and cottage industries in this district as against 3,64,681 main workers as per census. The percentage of main workers to the total population was 34.02, which was less than the State average of 36.82 per cent. Iron ore, manganese ore, lime-stone, quartz and quartzized bauxite, lime shell, silica sand, ornamental and building

stones such as basic dyke rocks, granite, laterite, etc., are the important mineral resources; and teak, *matti, nandi, kindal, heddi, honne, daman, jamba*, sissum or rosewood and bamboo are the chief forest resources; these provide raw materials to the mineral and forest-based industries in the district. The district has adequate infrastructure in general, to develop industries. But the railway facilities in the district are very poor. Forest roads and fisheries roads are mostly fair weather roads. The natural resources with which the district is blessed, are phenomenal, with forest, marine and mineral wealth alone promising new vistas of development besides providing tremendous scope for the agro-based industries.

OLD TIME INDUSTRIES

The district had been the home of many old-time industries. Several of them are now extinct. An important handicraft is sandalwood and rose-wood carving of the Gudigars. It is practised as a craft rather than as an industry. The workmanship on the wooden pillars and carving in the old buildings of the district is excellent. The old method of oil extraction, though still found in various parts of the district, is being gradually replaced by modern mills. Sugarcane juice is extracted to manufacture jaggery and molasses by a mill which consists of three cylinders moved by a perpetual screw. Before 1883, sandalwood-carving and metal, horn, cane, earth and stone works, oil-pressing, making of molasses and jaggery, processing of catechu, manufacture of salt, and sawing timber by steam, were found in the district. The articles made by the Gudigars like work-boxes, glove-boxes, jewellery boxes, writing boxes, work-tables, watch-stands, pen-stands, pen-holders, chess-boards and various other articles including statues were highly appreciated. Some of the articles carved by Subbanna of Honavar were sent to the 1867 exhibition in Paris and he gained a silver medal. Fancy articles like combs, snuff-boxes, handles for sticks and knives, buttons, rings, and toys of cattle, deer and bison horns were made by some carpenters and Gudigars at Kumta, Honavar, Bilgi, Siddapur, Sirsi and Sonda. Blacksmiths, coppersmiths, metal and pot makers were found in the principal towns and large villages. The excellent cane works were produced during the 19th century at Karwar by Chinese workmen, who were formerly convicts in the Karwar jail. Oil-pressing was an important industry. It was extracted chiefly from coconuts and to a small extent from castor-seed. Pottery was carried on in most towns and villages.

Besides this, small quantities of molasses was produced from palm juice by boiling it with lime. *Catechu* was had from khair tree *Acacia catechu*. Salt was manufactured at Sanikatta, Kumta, Shirali and Bailur upto 1878. In that year all minor salt works except the one at Sanikatta were closed. The total quantity of salt manufactured was 1,45,978 maunds in 1894-95 and in 1910-11, it came to 1,98,195 maunds.

Wood-based Industries: As forest predominates, there is a wide scope for development of forest-based industries in the district. Kannigeri Saw Mill was started in 1875, about five miles north of Yellapur at a cost of Rs 61,000. To encourage private enterprise, the Government stopped the jail industries since 1883. Before integration, there were three saw mills in the district. Of these one is at Dandeli (1943) owned by Government, one at Kirwatti (1942) sponsored by Government and subsequently owned by a private party, and the third is at Kumta, owned by a private party started in 1907. The Indian Plywood Manufacturing Co., Ltd., was formed in 1943-44.

Agro-based Industries: The first handloom factory registered under the Factory Act was started in 1909 at Nandangadda near Karwar. In 1929, three mechanised rice mills were started, of which two were at Sirsi and one at Haliyal. Subsequently, four additional factories were started, two at Bhatkal in 1933 and 1940, one at Gokarn in 1943, and the fourth at Yellapur in 1944. Many of these rice pounders were also engaged in *poha* making and wood cutting during the off-season. Cotton textile industry consisted mainly of handloom weaving on cottage basis. The British factory founded at Karwar, had given a fillip to this craft during the 17th century. The four handloom factories which existed during the present century were situated at Bankikodla, Honavar, Lakshmeshwar and Nandangadda. One power loom factory was started in 1949 at Nandangadda by the former handloom factory.

Mineral based industries: The development of mineral-based industries revolved around the deposits of iron ore, manganese ore and lime-stone as they are available in large quantities. One of the mine owners, who was keen on establishing a ferro-manganese plant at Dandeli was granted a license by the Government of India in 1955, for producing about 10,000 tonnes of standard ferro-manganese annually. Electro-Metallurgical Works Ltd., had been registered with an authorised capital of Rs 50 lakhs and it is said that it was the

first factory in India to run on electricity for melting ore. The foundation of the main factory was laid in 1956 and it started production in 1957.

Village Industries and Industrial Co-operatives

Prior to reorganisation of the Industrial sector from 1-7-1956, the work pertaining to the industrial Co-operatives and Village Industries were managed by the Assistant Registrar with the assistance of a District Officer for Industrial Co-operatives and Village Industries (I.C. and V.I.) and the industrial supervisors. Consequent upon the separation of the industrial sector from co-operative sector in 1956, the administrative control of the industrial sector in Uttara Kannada has passed to the Special Deputy Registrar, IC and VI, Belgaum. There were 72 Industrial Co-operative Societies covering as many as 20 cottage industries in the district. The Village Industries in the district prior to 1956 were, bee-keeping in the coastal taluks and Siddapur; fishing industry in coastal taluks, carpentry and wood turning at Sadashivgad, Karwar, Ankola, Kumta, Honavar, Sirsi and Dandeli; blacksmithy at Sirsi, Ankola and Kumta; coir works at Honavar, Kodibag, Chendiye and Aversa; coppersmithy at Kumta and Honavar; cane and bamboo works at Ankola, Malgi, Kumta and Nandangadda; tanning and leather works in all the taluks; handloom weaving at Nandangadda, Kodibag, Aversa, Ankola, Kumta and Honavar; wood carving at Kumta, Honavar, Sirsi and Siddapur; pottery at Halkar, Kajalli, Vanalli, Kekkar, Baad, Valgalli, Hervatta, Karki, Haldipur, Bengre, Mundolli, Haliyal, Kumbarkop, Chendiye and Majali; mat weaving at Valgalli, Halkar, Kadwad, Kumbarwada and Sirsi; oil pressing at Sadashivgad, Ankola, Bankikodla, Karki; limestone burning at Manki, Tadri, Nandangadda and Haldipur; and beedi rolling in all the taluks. Other important village industries in the district were button and horn works, assembling bullock carts, dyeing and printing, etc. The Industrial Co-operative Societies of the district helped the artisans by providing loans, raw materials and sending the finished goods to the various market places. Several occupations and industries such as furniture making, tailoring, printing and painting have shown a significant development, but the important rural industries are still under-developed in the district.

Mining Industries

The Uttara Kannada district is blessed with rich mineral wealth, second only to Bellary district in Karnataka. The important minerals

of the district are iron ore, lime stones, quartz, bauxite, lime-shell, silica, sand and clays. During pre-Independence days there was no organised effort to explore the mineral resources in the district. A very small portion of manganese ore produced in this district was being utilised by the Ferro Alloys Factory of Dandeli. The remaining manganese ore was exported to Japan, South Korea, Czechoslovakia and other European countries.

After Independence, the Government of India and the State Government are exploiting the available mineral resources for industrial development in the country. The share of the private enterprise is also appreciable in this field. The important mineral based industries and the mineral consumed by them in the district are Dandeli Ferro Alloys Ltd, using manganese; the West Coast Paper Mills, and units like grit factories using lime shells and stones, and the tile factories using clay of the coastal belt. The Department of Mines and Geology has been undertaking systematic geological and mineral survey with a view "to deciphering the Geology of the State and also prove its economic mineral resources". (A survey of the minerals available in the district and their mining has been dealt with in Chapter I).

Most of the present day mining operations are undertaken by a number of small producers who merely work the soil to depth of three to four feet and collect the float ore. Though there are 130 mining leases in the district, most of the deposits, as reported by the Geological Survey of India, remain to be exploited. It is learnt that the export restriction of the Government in 1960 and the Forest Conservation Act of 1980 for granting leases have restricted the mining activities in recent years. Besides these, the new smelting technology has reduced the use of Manganese in iron plants. Export of manganese is now mostly limited to Japan and South Korea. Thus demand for manganese has been considerably decreasing. Of late mining in the district is not so vigorous as it had been a decade ago.

Mysore Minerals Ltd.

The Mysore Minerals Ltd., an undertaking of the Government of Karnataka, is a lessee for exploitation of manganese ore in the District. Its project office is at Dandeli, and controls all the nine mines that are working within a radius of 50 km and extracts an average of 75 to 80 thousand tonnes of manganese ore annually and

exports it through Belekeri and Karwar ports. The Company is having earth moving machineries like dozers, deep drills, crawler shovel, terex loaders, road rollers, heavy duty dumpers and trucks. It has established a vocational training Centre to provide training for the workers and officials in the mines. Chemical Laboratory of the Bisgod mine is analysing all types of minerals that are extracted for shipment. The central workshop of mining company is equipped with lathe, welding set, etc., for the purposes of repairing and maintenance of all machineries.

Bisgod manganese mines, which are situated about 10 km towards north of Yellapur, are the biggest mechanised mines in the district. The units extraction of manganese ore has increased from 8,000 tonnes per annum in 1968-69 to 50,000 tonnes per annum in 1982-83. The following table gives the taluk-wise area under mineral concessions as in 1983-84.

<i>Name of the taluk</i>	<i>Area under Mineral Concessions (in hectare)</i>		
	<i>Mining lease</i>	<i>Quarry lease</i>	<i>Total extent</i>
Ankola	3.94	10.40	14.34
Bhatkal	110.99	—	110.99
Haliyal	219.55	10.40	229.96
Honavar	611.15	1.20	612.35
Karwar	1,273.85	1.20	1,275.05
Kumta	759.97	1.76	802.21
Supa	10,807.27	71.22	10,878.41
Yellapur	1,107.29	2.40	1,109.70
Total	14,894.01	98.58	15,033.01

No concessions in remaining three taluks.

Total areas covered under concessions come to 1.48% of the district's total area. *Source* : DSO-DMG-BLD.

North Kanara Mineral Industry Association, affiliated to the Federation of Indian Mineral Industries, New Delhi, was formed during the 1970s. Its main objectives are to represent the mining interests, to redress the difficulties experienced by the mine owners, to promote scientific knowledge for the exploitation of mineral wealth, and to

impart the various legislations passed often and on to the members. Small miners who are its members, have been dealing with the MMTC and MML through this Association for their benefits.

POWER GENERATION

The source of power for the Uttara Kannada is the Sharavati Hydro-Electric Project, located in the neighbouring Shimoga District. Power from this scheme was made available to Dandeli since 1955. Prior to this, one power generating station was established at Karwar in 1954 with fixed and working capitals of Rs 4.6 lakhs and Rs 55,000 respectively. It employed six technical and 11 other workers, and generated 67,340 units of electric power during the year 1955. The supply of power was restricted to Karwar Municipal limits and Kodibag sub-station only although the license stipulated to supply adjoining villages within a radius of eight km. Earlier to these power generating stations, one private person by name Ganesha Ramayya Hegde of Kilar of Siddapur taluk was generating electricity by his personal efforts by utilising a small water falls in 1935 and used it for domestic consumption. Similarly P.P. Kattige of Chikkadande village of Yellapur taluk was generating electricity and used it for domestic purpose in 1958.

With a view to encourage the private sector in the matter of power generation, Government have permitted the private sector participation in power generation within the framework of the national policy. They have allowed the setting up of Captive Thermal Power plants without any ceiling. In case of hydro-electric plants in private sector, they are freely permitted upto 25 MW capacity. In the range of 25 to 100 MW applications are considered case-by-case. The intending private sector should pay an appropriate royalty for use of water, lease rent and wheeling charges to the Karnataka Electricity Board. The State Government has considered the application of the Ballarpur Industries to start a unit with an installed capacity of 60 MW at Dandeli. The Centre is yet to clear the proposal.

Kali Hydro-Electric Project

The decision to construct a gravity dam at Supa across the Kali had been a bold decision. The Bombay Government which had control over the area before Reorganisation (1956), had decided that

the geological condition of the area as unsuitable for such a dam. But after a series of exhaustive and elaborate tests, the decision was taken to build the dam. A number of sheer zones in the area added to the difficulties. But when the Karnataka Power Corporation was set up in 1970, the Kali Hydro-Electric Project was cleared for execution in March, 1971 for implementation of Phase I of Stage I works and in July 1973 for execution of Phase II of Stage I works.

The Kalinadi Hydro-Electric Project envisages using the power potential by constructing a series of dams, tunnels and power houses at the cost of Rs 450 crores. It is proposed to build 10 dams, of which, five are on the Kali and remaining five on its tributaries, viz., the Tattihalla, Kaneri, and Vaki; 25 km of tunnelling which includes 9.4 km long head race tunnel, three pressure shafts, six penstocks, and other water diversion tunnels, and six power houses, of which four at the foot of the dams and two at the high head are contemplated. The total installed capacity under three stages of Kalinadi Hydro-Electric Project is estimated as 1,316 MW of which, 910 MW in Stage I, 278 MW in Stage II, and 128 MW in Stage III. The Stage I envisages construction of 101 mts high Supa Dam across the river Kali and a small power house at the foot of the dam of an installed capacity of 100 MW, diversion of water from Upper Kaneri to Supa Reservoir by constructing a small diversion dam across the Kali and a tunnel, construction of a dam across the Kali at Bommanahalli to form a small reservoir and divert it into the main water conductor system consisting of 9.5 km long head race tunnel, surge tank, three pressure shafts, and six penstocks to feed six generating units at Nagjhari power house which has got the installed capacity of 810 MW; further diversion of water from Tattihalla catchment to Bommanahalli pick-up, by constructing a dam across the Tattihalla and a tunnel. The Stage II is under initial stages of construction of dams and power houses near Dandeli, Kodsalli and Kadra, it will have an installed capacity of 278 MW. The Stage III consists of 128 MW installed capacity from four installation units of 32 MW each at the lower Kaneri power house.

Stage I, Phase I contemplates the construction of a pick-up Dam across the Kali river near Bommanahalli and diversion of the river water through a water conductor system to the Nagjhari power house, where six generators of 135 MW each are installed, besides other ancillary works such as roads, buildings, water supply to the colonies, etc., all the works are almost completed. The total length

of the Bommanahalli pick-up dam is about 1,000 metres, of which the concrete spill way and masonry non-overflow portion is 350 metres and the rest is earth work. The maximum flood discharge computed at the dam site was 9,622 cum per second (3,40,000 cusecs). The surplus requirement for the dam is met with, by providing seven radial type crest gates, with an emergency gate on the spill-way and a sluice gate about the dead storage level of the reservoir. The earthen dam is provided on both the flanks of the central concrete/masonry portion. The length of the left and right flanks are 530.15 metres and 168.65 metres respectively. The water conductor system consists of an approach channel of 122 metres length which leads to the intake structure of two vents of 7.925×3.29 metres with a semi-circular trash rack in front of it. The rectangular opening gradually merges into a horse-shoe tunnel in transition length of 7.62 metres. This part of the tunnel work is included in the works of intake structure

Head Race Tunnel is a horse-shoe tunnel of about 8 mtr diameter and 9,445 metres long concrete line running upto the surge tank. It is designed for a maximum discharge of 234 cum per second (8,250 cusecs). The entire length of the head race tunnel has been tackled through five adits viz., Gutti adit, Jambga adit, Ambga adit, Nagjhari adit and Surge adit, spaced at convenient intervals. The head race tunnel finally ends at the surge tank which is of 21.34 metres diameter and 64.313 metres deep. There are three gates at the bottom of the surge shaft, from where three pressure shafts take off.

Nagjhari power house: The Nagjhari power house is located on the right bank of the Kalinadi at the confluence of the Nagjhari stream with the Kali. The site of power house is a magnificent one. The construction of power house consists of Machine hall Service/Repairbay, control room and oil room annexe, tail race galleries and outdoor switch yard. The Nagjhari first unit was successfully commissioned on December 22, 1979. It was delayed for four months because of formation of silt in the surge tank caused by flash floods in the Kali river. As in March 1984, six generators of 135 MW each were installed, and they have been commissioned.

Phase II

Phase II of the Stage I contemplates Supa dam, Supa dam power house, Upper Kaneri dam and diversion tunnel, the Tattihalla dam and diversion work. Supa dam is all power gravity dam

constructed across the river Kali about two km lower down of Supa town. The dimensions of the dam are 110 metres high and 322 mtr long with a net capacity of storing 3.98 Tm cum. The reservoir has the catchment area of 1,057 sq km and rainfall ranging from 2,500 mm to 7,500 mm, and estimated average yield of the dam is 117.6 Tm cft which corresponds to a continuous discharge of 104 cum per second (3,670 cusecs). On the right bank of the Supa dam, a dam power house with an installed capacity of 100 MW (two units of 50 MW each) is proposed to utilise available water source and to generate 455 million units of power annually.

The Kaneri, a tributary of the Kalinadi joins the Kali river near Nagjhari power house. The dam built across the Kaneri near Kumbarwada village is also a concrete gravity dam having maximum height of 26 mtr, length of 172 mtr and net capacity of storing 3.23 Tm cum. It has the catchment area of 98 sq km and receives about 7,500 mm of rain. An unlined horse-shoe shaped tunnel of 6.55 mtr diameter and 325 mtr long, diverts water of Kaneri to the Supa reservoir. It is estimated that 280 million cum of water will flow from Kaneri to Supa reservoir every year.

Tattihalla Dam and Diversion works : The Tattihalla dam across the Tattihalla stream is a storage dam having 22 Tm cum net capacity reservoir. It is 42.4 mtr high at the deepest portion and 1,225 mtr long with FRL at 466.34 mtr. It serves dual purpose of diverting the water from Tattihalla to Bommanahalli lake, and provide adequate capacity for integrated operation of several reservoirs. The diversion consists of a "Segmental type" (D-Shaped) tunnel of 4,267 mtr long, 6.4 mtr in diameter. The length of approach channel is 2,078.75 mtr and exit channel is 2,941.32 mtr long. All the works connected with the Tattihalla dam including rehabilitation, construction of approach roads and temporary buildings are under progress. The estimated cost of the Stage I is Rs 22,823.49 lakhs.

The Gangavali Hydro-Electric Project Stage I (Bedti) contemplates construction of a dam across the Bedti river near Yellapur. It comprises of one storage reservoir, water conductor system with a headrace tunnel, surge tank, pressure shafts and an underground power house. It will have an installed capacity of 210 MW. The estimated cost of the project was Rs 137 crores. Energy to the extent of 1,050 million units will be added to the system annually by this project and infrastructural works are in progress near Magod.

There has been some popular opposition to this scheme and a committee to look into the grievances of the people has been appointed. The detailed survey and investigations are being carried out for the Aghanashini Hydro-Electric Project in the district. The project envisages the utilisation of the Unchalli Falls and set up a unit with 250 MW generating capacity. Investigations are yet to complete.

Atomic Power Station

The Atomic Energy Commission of India has chalked out a fifteen-year ambitious programme to produce 10,000 MW of power. Under it, the Department of Atomic Energy has approved the installation of two units of 235 MW each at Kaiga of Uttara Kannada. Kaiga village of Yellapur taluk is about 54 km away from Karwar, situated on the banks of the Kali amidst dense forest and it is thinly populated. It is a remote village having abundant water supply from Kadra reservoir and most of the surrounding land belongs to the Government. Apart from this, the raw material, Uranium 238, is hoped to be had from nearby Arabail and Manjuguni ghats. The required Heavy Water is expected to be secured from Rajasthan. About 3,000 acres of land, of which about 500 acres privately owned are to be acquired for the purpose. The plant is expected to start functioning in around 1994. The total cost is estimated to be more than Rs 2,000 crores and it is expected to provide employment to about 5,000 persons.

Distribution of Power

The Sharavati Hydro-Electric Project is the chief source of supply of electricity to the district. The Nagjhari power house of the district adds to the total requirements with its generating capacity of 810 MW. The length of transmission lines in the district as on July, 1983 were as follows: 220 KV lines 93.00 km; 110 KV lines 279.23 km; 33 KV lines 142.00 km; 11 KV lines 1,554.367 km; and others: LT lines 2,685.170 km. The details of the sub-stations of the district were as follows: 1) Karwar 5 MV, 2) Ankola 5 MV, 3) Kumta 25 MV, 4) Honavar 1 MV, 5) Gersoppa 2 MV, 6) Murdeshwar 5 MV, 7) Sirsi 6 MV, 8) Yellapur 1 MV, 9) Dandeli 40 MV, and 10) Supa 10 MV.

Out of the total number of 13 towns and 1,273 inhabited villages (1981 Census), all towns and 734 villages were electrified by the end of March 1983. The number of towns and villages electrified in the

district earlier were 4 in 1961, 39 in 1966, and 323 in 1976. The pumpsets energised were 66 in 1966 and 2,983 in 1976. The number of pumpsets energised has increased from 4,815 in 1981-82 to 5,385 in 1982-83. The domestic lightings have increased from 38,846 (houses) in 1981-82 to 45,176 in 1982-83. The total number of all-electric homes have increased from 3,510 in 1981-82 to 3,758 in 1982-83. Total industrial and commercial lightings have increased from 10,258 in 1981-82 to 10,534 in 1982-83. During 1982-83, about 50 villages, 568 irrigation pumpsets, 2,515 domestic lightings, 663 AEH, 115 industrial units and 334 commercial lightings were electrified. In all, there were as on 31st March, 1983, 737 villages and towns electrified, 5,383 irrigation pumpsets, 45,176 domestic lightings, about 3,758 AEH, 1,788 industrial units, 8,746 commercial lightings in the district. The total consumption of electricity in the district has increased from 19,38,72,474 units in 1981-82 to 19,18,10,080 in 1982-83. The number of villages and towns electrified and the number of pump sets energised respectively in the district during each year between 1980-81 and 1982-83 are: 48 and 348 in 1980-81, 36 and 446 in 1981-82, 50 and 568 in 1982-83 and 18 and 119 upto August 83. The table on p. 395 gives the taluk-wise number of electrified villages as in 1981-82 and 1982-83.

Finance for Industries

Financial resources played an important role for setting up of industries. Commercial banks of the district have provided credit facilities. As on 31st March, 1979, about 106 branches of commercial banks were functioning in the district, of which 46 branches were semi-urban and 60 were rural. The advances made to the small scale industries were Rs 199.03 lakhs. The Central Co-operative Bank with 31 branches, and nine Urban Co-operative Banks have provided financial assistance to the small scale industries and rural artisans in the district. The Karnataka State Finance Corporation with the Regional Office at Hubli is also providing long term finance on liberal terms. During 1979-80, it rendered advances to 54 industrial units to the extent of Rs 95.55 lakhs. Under the District Credit Plan for the year 1980, about 250 *gobar* gas units were financed and amount advanced was Rs 13.10 lakhs. The amount of Rs 33.65 lakhs and Rs 91.35 lakhs have been earmarked for rural and cottage industries, and small scale industries respectively. (also see Chapter VI).

District Industries Centre

The District Industries Centre has started functioning from 21st December, 1979 at Karwar. It is headed by a General Manager who

Statement showing the taluk-wise total number of electrical installations upto 31st March, 1983 and total energy consumed in 1981-82 and 1982-83 in Uttara Kannada District

Taluk	Total no. of villages electrified	Total no. of irrigation pump-sets energised	Total domestic lightings	All electric homes	Industrial units	Commerial lightings	Total energy consumed in units	
							1981-82	1982-83
Ankola	64	550	3,619	157	116	645	36,27,716	37,80,780
Bhatkal	39	592	3,736	454	142	694	29,89,023	33,71,724
Haliyal	62	139	3,086	82	113	518	17,06,958	18,73,596
Honavar	69	1,676	4,682	299	136	830	35,45,535	35,98,576
Karwar	34	182	7,504	608	254	1,170	15,73,65,611	15,92,83,622
Kumta	95	1,087	5,820	383	175	1,183	28,55,371	29,45,726
Mundgod	35	36	2,328	76	140	416	13,57,657	15,85,404
Siddapur	103	208	2,605	140	75	497	12,27,797	12,68,488
Sirsi	163	786	6,355	806	362	1,507	51,26,474	55,00,284
Supa	30	15	3,663	655	196	848	1,21,54,538	1,28,65,372
Yellapur	53	112	1,778	98	89	438	29,14,794	20,36,508
Total	747	5,383	45,176	3,758	1,788	8,746	19,38,72,474	19,81,10,080

Source : Executive Engineer, K.E.B. (O & M), Sirsi.

has overall administrative and financial powers for the development of industries in the district. The main functions and tasks are assigned to the functional managers in the district. The three Sub-Divisional offices headed by Assistant Directors are working at Karwar, Kumta and Sirsi. The District Industries Centre has implemented the Special Component Plan and Self-Employment Scheme sponsored by the Central Government for Scheduled Caste youths and unemployed educated youths respectively. The progress shown by this industrial centre for the last three years is as follows :

<i>Particulars</i>	1980-81	1981-82	1982-83
No. of provisional registration certificates issued.	225	148	174
No. of permanent registration certificates issued.	54	74	64
Amount of State subsidy sanctioned.	—	61,000	—
No. of new unit certificates issued.	11	9	6
No. of fixed assets valuation certificates issued	—	1	1
Amount of seed money sanctioned.	—	—	99,100
Training under rural artisan programme and supply of tools and equipments, etc.	17,780	41,650	1,12,290
Establishment of raw material and marketing depots.			
a) Sandalwood	1	—	—
b) Leather	—	1	—
Loan under rural industries project, sanctioned	—	50,000	—

Being an industrially backward district, the concessions and incentives available for setting up of new industries and substantial expansion of existing industries are as follows :

1) Liberal financial assistance and 10 per cent State subsidy on capital for new industrial investment in three taluks of Karwar, Sirsi and Haliyal and notified industrial areas of other taluks. 2) Capital

subsidy of Rs 30 lakhs for pioneer industrial units have capital investment of more than three crores. 3) Price preference of 15 per cent in the Government purchase, for five years. 4) Refund of sales tax on purchase of raw materials for five years. 5) Contribution to an extent of 75 per cent towards cost of preparation of feasibility studies. 6) Exemption from Electricity Tax for five years. 7) Waive of conversion fines. 8) Full exemption from stamp duty, and reduction of registration fees, chargeable at Rs 2 per thousand on loan and credit needs. 9) Allotment of industries sheds/plots under the concessional terms, in case of technical entrepreneurs, 10) Supply of machinery on hire purchase by Karnataka State Small Scale Industries Development Corporation, Bangalore.

Besides, these incentives and concessions of the State Government, the Central Government also provides some incentives and concessions for the development of industries in this industrially backward district: 1) Concessional finance to small scale industries, provided through commercial banks, at the rate of 12.5 per cent on term loans having repayment period of more than three years and assistance for working capital at lower rate of interest. 2) Exemption from Income Tax, on 20 per cent profit earned during the first 10 years. 3) Relaxation in establishment of banned industry. 4) Reimbursement of the entire amount of consultancy fee, of approved private consultants, by Small Industries Development Organisation 5) Supply of machinery on hire purchase basis at 11 per cent, and 10 per cent earnest money deposit to units with total investment in plant and machinery up to Rs two lakhs, by the National Small Industries Corporation.

The Department of Industries and Commerce also provides the following concessions along with some industrial development schemes: 1) Reimbursement of interest paid, over and above 7 per cent on term loan subject to a maximum of Rs 20,000 per annum for a period of five years in case of a Small Scale Industries started by technicians. 2) Seed capital assistance to the Small Scale Industrial units.

Development Schemes

Self Employment: Upto February, 1982, there were 52 industrial units assisted by way of seed money to the extent of Rs 3.61 lakhs for establishing various types of industries in the district. Commercial banks and other financial institutions have financed to the extent of Rs 32.33 lakhs.

Bee-keeping: Under Integrated Development of Western Ghats Region, six bee-keeping centres have been established at Ankola, Kumta, Honavar, Sirsi, Yellapur and Siddapur. In each centre there is one bee-keeping fieldman providing technical guidance and other assistance to bee-keepers. As on February, 1982 about 930 bee hives have been supplied to the centres for distribution at 25 per cent subsidy. About 158 candidates have been trained in bee-keeping. The Institutes at Kumta and Honavar train youths in other crafts.

LARGE AND MEDIUM SCALE INDUSTRIES

There were seven large and medium scale industrial units in the district as on 31st March, 1983. They were: 1) West Coast Paper Mills Ltd., Dandeli, 2) Indian Plywood Manufacturing Co. Ltd., Dandeli, 3) Jai Hind Saw Mills Ltd., Dandeli, 4) Ballarpur Industries Ltd., Binaga (Karwar), 5) Karnataka State Veneers Ltd., Kavanchur, 6) Dandeli Ferro Alloys Pvt. Ltd., Dandeli and 7) Green Grass Dehydration and Pellatisation, Balekoppa of Siddapur Taluk. Besides these seven industries, there were 766 small scale industrial units, about 191 units of Khadi and Village Industries, 110 handicraft units, 124 hand-loom units are functioning in the district.

Dandeli Saw Mill

In 1917, there was a saw mill unit started by the Department of Forest at Dandeli and a number of such saw mill units were opened around Dandeli by the Department. The importance of large scale saw mills was realised during the First World War, and thereafter portable saw mill units were grouped together into one large scale unit, in 1943 and called it as Jai Hind Saw Mill in 1948. On 1st April, 1975, this unit has been taken over by the Karnataka State Forest Industries Corporation Ltd., and named it as the Karnataka State Forest Industries Corporation Ltd., Saw Mill, Dandeli. This mill provides employment for 91 men and 29 women, produced 1,164 cu mtr goods and paid Rs 60,000 per month as wages during 1982-83. The mill is capable of using its own waste materials like saw dust and off-cuts to generate steam, which runs its 110 h. p. horizontal steam engine. During 1975-76, the Karnataka State Forest Industries Corporation added a storage shed of 90' × 30', a new saw bench with a 15 HP electric motor, seasoning kiln with 7M₃ charge capacity, lathe machine, wood turnery and welding machine fitted with an electric motor. The Corporation had a plan

to convert slowly the mill from steam power to electric power. The intake capacity of the existing band saw mill is 16 to 17 cu mtr per day. It receives the special indents for supply of sawn timber and railway sleepers to the Railways, Defence Department, etc. Labour welfare measures are being taken up by providing rent free quarters. Other benefits like bonus, gratuity, E.P.F. and E.S.I. are provided as per Government Acts and Rules. The mill drew 3,397 cu mtr of timber in 1978-79 worth Rs 25.28 lakhs and revenue realised was Rs 27.46 lakhs. The figures for 1982-83 are, 1,915 cu mtr timber drawn worth Rs 25.36 lakhs and revenue realised was Rs 49.88 lakhs.

Plywood Factory

The Indian Plywood Manufacturing Co. Ltd., is a public limited company having its administrative office in Bombay. It started the factory at Dandeli in 1944 with the sympathetic co-operation and encouragement from the Central and State Governments. The State Government supplies the raw materials in the form of logs and wood wastes at concession rates. The quantity of timber supplied annually is about 40,900 cu mtr and lops and tops is 39,975 cu mtr. The capital investment of the company was Rs 571 lakhs of which Rs 97 lakhs from share capital, Rs 142 lakhs from reserves and Rs 332 lakhs loan from financial institutions and banks. The company provides total employment for 983 persons, of which 902 men and 81 women, as on 31st October, 1983, and are paid Rs 4.50 lakhs as wages per month. The Board of Directors, Professional Directors and Technologists are managing the company. It has spread its operation with modern veneering equipments imported from America.

In addition to the Plywood manufacturing unit of Dandeli, four other factories are working in the State at Dharwad, Talguppa, Hangarkatta and Subhramanya. The Company supplies all types of plywood required for ammunition boxes, pontoons, bridging stores, army boats, river crafts, air-craft, plywood for manufacturing gliders and repair of air-craft, fire-proof plywoods for the navy, military equipments like skid boards, sledgers, etc. In the year 1960-61, the Company installed the particle board plant of the capacity of 24 tonnes per day to use the wood wastes in the form of lops and tops, end cuts, wastes of the plywood units and saw mills. The main products of the company are commercial plywood of all types, shuttering plywood under the name of Anchor concrete shuttering plywood, marine plywood under the name of anchor marine plywood,

air-craft plywood, decorative plywood, flush doors of all types under the name of anchor flush doors okal veneered board, unveneered particle boards, viz., Anchor Nova Wood and Anchor Nova Teak, Anchor Nova Top for commercial veneer surfaces and decorative veneer surfaces, royal decorative series of different shades and texture, etc.

The company provides rent free residential houses to its employees at Dandeli. It provides medical and educational facilities to its employees and their families. The multi-purpose co-operative society of the employees meets their requirements of consumers' goods. Production in the Dandeli factory during 1980-81 was 14.08 lakh sq mt of plywood veneers (4 mm) and 3.34 lakh sq mt of particle board (19 mm). The figures for 1981-82 were 14.86 and 1.97 lakh sq mt respectively.

West Coast Paper Mills

The West Coast Paper Mills Limited belonging to the Bangur Somani Group of Industries, came into existence at Dandeli in 1955, with the availability of bamboo in abundance, water from the perennial Kali river, and railway link to transport raw materials and finished goods, with an authorised capital of Rs 5 crores. It started its work in 1958 with an initial capacity of 18,000 metric tonnes of paper per annum. The production at present is about 58,000 metric tonnes annually. Efforts are being made to attain the installed capacity of 60,000 metric tonnes per annum by meeting the raw materials from Tamilnadu, Andhra Pradesh, Maharashtra and Madhya Pradesh and additional power from the Karnataka State Electricity Board. The pulp and paper integrated plant used only those forest plants which are generally not used in any other industry, such as bamboo and the varieties of hard woods mainly obtained from local forest area and neighbouring States. During 81-82, the investment of the company stood at Rs 2,282.76 lakhs of which, Rs 500 lakhs share capital, Rs 759.57 lakhs reserves and surplus amount, Rs 781.73 lakhs loans, and Rs 241.46 lakhs fixed deposits. Its production has increased from 55,333 tonnes in 1981-82 to 57,687 tonnes in 1982-83. It has provided employment for 3,717 persons during 1982-83 of which, 3,521 men and 196 women workers, and paid about Rs 35 lakhs per month as wages.

Varieties of paper produced in this mill so far include white and coloured, bonds, cream-laid, azure-laid, white and colour printing,

offset printing, maplitho, unbleached printing, duplicating paper, white and coloured manifolds, M. G. Poster, pulp board, M. G. Manila, M. G. Ribbed Kraft, M. G. Plain Kraft, M. F. Kraft, gumtape paper, mill wrapper, and special varieties of industrial papers. The welfare aspects of the employees have been taken up to provide all amenities of a modern town viz. banks, post and telegraph offices, telephone exchange, places of worship, clubs, theatre, schools and colleges, shopping centres, children's parks and gardens, swimming pool, play grounds, Rotary and Lions Clubs, Mahila Mandal, Co-operative societies, canteen, hotel, library, etc. A full-fledged 30-bed hospital is providing medical facilities to the employees and their families. A Rural Health Centre with 25 beds, and a T B Centre with 30 beds are functioning at Dandeli and specialised doctors to treat the rural people. Educational facilities are extended to the employees' children from nursery to the college level. Young promising technicians and engineers have been sent abroad to get specialisation in their profession.

Dandeli Ferro Alloys

The Dandeli Ferro Alloys Private Limited, Dandeli, was founded in 1955, under the name Electro-Metallurgical Works which was the first unit of its kind in India to use an electric submerged arc reduction process in a furnace built by ELKEM of Norway. In order to keep pace with, the increasing demand of steel industry, the management undertook expansion and diversification plans for special Ferro Alloys, by installing a new refinery furnace from BIRLEC of England for manufacture of low carbon and medium carbon ferro manganese as an import substitute project in 1962, and the capacity was further augmented in 1975 by addition of one more refining furnace. Apart from the steel industry, the company caters to the needs of mini steel plants, steel foundries, welding electrode industry, tool and alloy steel industry, etc. It is associated with mining companies to look after mining operations for manganese ore and for manufacturing electrode paste, ferro alloys powders, etc.

Manganese ore is the principal raw material for the production of Ferro Alloys. It is extracted with modern mining equipment from mines within a radius of 50 km by an associate company, Nagari Mining Company. Other major raw materials are coke, limestone, quartz, magnesite bricks and graphite electrodes, and electricity. The Company has a reduction furnace for manufacture of standard grade ferro manganese and two refining furnaces for low and medium

carbon ferro manganese. It also manufactures silico manganese, which is further processed in refining furnace to produce low and medium carbon ferro manganese. The Research and Development division of the factory has the latest equipment for chemical and physical testing including full scale trials in the field of electro metallurgy, electro processes, mineral and ore beneficiation.

The Company provides free medical treatment to all employees and their families at the Company's dispensary which has modern diagnostic aids and a full time medical officer. It runs the English medium school from nursery to junior college level at Dandeli, under the banner of the Servants of India Society. It also runs its own DFA Kannada School. Both these schools are open to the public, and education for employees children is free. Lalbhai Patel Charitable Trust assists these institutions. The Bangalore University awards the Lalbhai Patel Gold Medal to the First ranking graduate student in Metallurgy every year donated by Dandeli Ferro Alloys Ltd. The employees club has facilities for outdoor and indoor games, and also library with books and periodicals in four languages. The Company has sponsored the Lalbhai Patel Rolling Shield for the Uttara Kannada Cricket Tournament.

Dehydration and Pelletisation Project

The Karnataka State Forest Industries Corporation Ltd., has started the Green Grass Dehydration and Pelletisation Project in the year 1974, to tackle the problem of fodder scarcity, at the cost of Rs 45 lakhs, at Balekoppa, about 13 km from Siddapur on the Siddapur-Sorab Road. It has developed a farm for the cultivation of various improved varieties of grass like Hybrid Napier, Guinea grass, Para grass, green panic and leguminous fodder tree subabul, etc., to meet its raw material requirements. This industry has been providing employment opportunities for about 89 persons both in the factory and farm. During 1982-83, it has provided employment for 24 persons, of which 11 were permanent. In addition to the above, there were about 65 farm labourers (35 men and 30 women) to carry out the farm operations. It paid about Rs 2,64,000 as wages and produced 176,760 tonnes of fodder. During the previous year it was 201,527 tonnes. The product of this factory is being marketed directly by the Corporation and also through Co-operative Societies, to dairy farms, sheep breeding farms, zoos and sanctuaries of the Forest Department, etc. The labourers residing at the project have been provided with rent free sheds.

Ballarpur Industries Limited

The Ballarpur Caustic Soda and Chlorine Complex, a public limited company belonging to Ballarpur Saga with its headquarters at New Delhi, was commissioned at Binaga of Karwar taluk in 1975 with an initial cost of Rs 23 crores. The company has acquired 1,200 hectares of salt marsh in Gujarah which yields annually about 1,20,000 tonnes of salt. Additional requirements are available from Gokarn. Another plant viz, Sodium Tripolyphosphate and Phosphoric Acid, the first of its kind in India, was commissioned in 1979. Its process involves the use of sizeable quantity of hydrochloric acid and it would not only remove the constraints in the production of caustic soda but would also enable the Company to gainfully utilise the entire production of chlorine from the unit. Chlorine is used in the paper mills and rayon factories, but a major part is converted into hydrochloric acid to be utilised for the production of phosphoric acid. Phosphoric acid is converted into sodium tripolyphosphate which is used adequately for the manufacture of synthetic detergents. The product of this Company is marketed all over India.

Caustic Soda Plant comprises brine preparation and purification section, section for washing, drying and liquifaction of chlorine, hydrochloric acid plant, chlorine filling station, caustic fusion plant, mercury cells, etc. Besides these main production sectors, some utility services such as cooling towers, water chilling plant, air compressors, generator-room, workshop facilities, etc., are also there. Phosphoric acid plant has a rock phosphate grinding unit, comprising of roll-crusher tube mill, belt conveyors, bucket elevators, dust collection systems, etc. The other sections of the plant consist of dissolvers, clarifier, mixer settlers, evaporators, stripping columns, vacuum pumps, storage tanks, etc. In addition to these, some utility services such as boiler, air-compressors, cooling tower and diesel generators have been installed. Sodium tripolyphosphate and phosphoric acid plant comprises reaction vessels, intermediate tanks, a spray dryer, material handling equipment, a calcinator, a cooler, a crusher, and fluid handling equipments like pumps, fans, blowers, etc. The chief raw material for caustic soda is salt. Since it is an electrolysis process, power is another major raw material. Rock phosphate is the chief raw material for the production of phosphoric acid. It is imported from Jordan and Morocco. Phosphoric acid and caustic soda which are available in the factory are the chief raw materials for the plant of sodium, tripolyphosphate and phosphoric acid.

The company has provided free furnished accomodation, a well equipped dispensary to render free services to its employees, kindergarten school and children's park, bus facilities, co-operative society, shopping centres, etc., in general and washing facilities, safe lockers, a first-aid facility, a canteen, rest room, recreational facilities, playgrounds for sports and games, etc., in particular. During 1982-83, the Company has provided employment for 1,081 persons which include 10 women, and their monthly pay bill is about Rs 8.40 lakhs. It produced 33,714 metric tonnes of caustic soda, 7,997 metric tonnes of phosphoric acid, and 3,868 metric tonnes of STPP in the same year. The figures for 1981-82 were caustic soda 41,552, phosphoric acid 5,328 and STPP 3,886, all in metric tonnes.

Karnataka State Veneers

The Karnataka State Veneers, Limited, Kavanchur, Siddapur Taluk an autonomous corporate body of the Karnataka State Forest Industries Corporation and India Plywood Manufacturing Company Limited, established in 1977 with an initial investment of Rs 50 lakhs contributed by the two shareholders mentioned above in the ratio of 51 : 49. The balance requirements of funds are met through borrowings from commercial banks and self-earning finance. It is manufacturing all types of veneers, for wall panelling, furniture making, plywood and particles board, laminated wood and other products, wood wares, etc, and supply goods for internal market as well as foreign market mainly to Japan, Italy and U.S.S.R. The raw material, timber, is supplied by the Government of Karnataka either from Forest Depots or extracted from the area allotted to it and the rates for both types of supply are fixed by the Government. During 1982-83, this company produced 1846 cmt of its products as against the production capacity 3,075 cmt. In 1981-82, its production was 2,777 cmt as against the capacity of 4,200 cmt. It provided employment for 164 men and one woman, and paid Rs 67,650 as wages monthly during 1982-83. Its turnover accelerated from Rs 35 lakhs in 1978-79 to 156 lakhs in 1981-82, and its exports from Rs 17 lakhs in 1978-79 to Rs 102 lakhs in 1981-82. It implemented extension of production facility by installing additional veneer slicing capacity during the year 1981-82. The company is applying two methods for veneered wood in the plant, viz, the rotary cut and the sliced.

The Company is managed by the Managing Director and is under the control of Board of Directors consisting of nominees of two share

holders, viz., the Karnataka State Forest Industries Corporation, and the Indian Plywood Manufacturing Co. Ltd., and seven others. The Managing Director is assisted by senior level managers. Workers and staff club is providing recreational facilities to the employees. The Company offers international customers for inspection of decorative veneers from Indian timbers like teak, rosewood, laurel, poon and others, and selection both at the company's factory at Kavanchur as well as from the company's warehouse in Bombay. For the convenience of international buyers, a large stock of veneers is kept in a warehouse near the Bombay International Airport.

SMALL SCALE INDUSTRIES

The District has had a number of useful and flourishing small scale and village industries. Many of these industries declined consequent on the disintegration of economic life in villages. The existing small scale industries employ both modern as well as traditional techniques. The main problems of the small scale industries are lack of credit facilities, out-moded techniques, unsatisfactory arrangements for supply of raw materials, lack of marketing facilities, etc. The Central and the State Governments have taken several steps to render help to solve the problems of these industries. The District Industries Centre has taken up comprehensive and systematic study to assess the extent of sickness of industries among the industrial units, and efforts have been made to rehabilitate the sick industries under the nursing programme. A sub-committee for rehabilitation of sick and closed units has been constituted in the district with the General Manager of the District Industries Centre, as convener. This Committee has powers to recommend to the sick industries financial and other assistance. A small scale industrial unit which has registered its name in the Department of Industries and Commerce is given financial assistance and is helped in obtaining scarce and improved raw-materials. It is provided with identification for its products for the purpose of sales. The machineries required are supplied under hire purchase scheme by the National Small Scale Industries Corporation, and the Karnataka State Industries Corporation. The new units are given incentives such as exemption from Octroi and Sales Tax, concession in electricity charges, etc., for a certain period. The Department of Industries and Commerce has advanced loans to them.

The district had 766 registered small scale industrial units in 1983. The capital investment of these industries was Rs 459 lakhs and they employed 6,398 workers. These industries have played a useful role in the economy of the district by providing jobs to the rural and semi-urban area and also by contributing to its wealth.

The taluk-wise break-up of their number as in March 1983 is as follows. Figures given in brackets indicate the number of workers. Ankola 95 (992), Bhatkal 41 (487), Haliyal 75 (392), Honavar 96 (1,042), Karwar 155 (935), Kumta 87 (966), Mundgod 15 (90), Siddapur 17 (82), Sirsi 163 (1292), Supa 9 (45) and Yellapur 13 (75). Total 766 (6,398). The categories of industrial units as in March 1983 are as follows. The figures in brackets indicate the total number of persons employed in each category. Ceramic and glass 65 (1,972), Chemicals 84 (292), Ferrous and Non-ferrous 47 (387), Electrical appliances 15 (65), Food, beverage and tobacco 57 (277), General Engineering 97 (492), Leather and Rubber products 45 (210), Paper, pulp and allied products 12 (110), printing 62 (310), Textiles 35 (112), Wood products 85 (555), Miscellaneous 162 (1,616). Total 766 units (6,398 employees).

Manufacture of Tiles

Manufacture of tiles is one of the important industries of the district. The main raw materials required for the industry are clay, firewood, water, kerosene oil and rice bran oil or muddy oil. The first three raw-materials are available in abundance in the district. The other raw materials are purchased out of Government quota by permits, through local dealers. Firewood is purchased directly from the Department of Forest and private sources. The raw clay brought to the factory is moulded and compounded well and fed to the de-airing pug mill to make the clay a compact mass. The slug of clay thus extracted is cut to required length, smeared with oil and conveyed to the press. The pressed raw tile is transferred from mould to wooden base and is set on the rack for natural drying under absolute shade. The green tiles are dried in drying racks for a period of one to two weeks depending on the weather conditions. The dried tiles are loaded in a kiln, burnt with firewood for a duration of about 27 hours and allowed to cool for two days. The cooled tiles are unloaded and stored according to their grade.

Before 1883, two kinds of tiles were manufactured viz., pan tiles and pot tiles. Pan tiles were made throughout the district and sold for Rs 3 to Rs 5 per thousand. Pot tiles, measuring 15"×5" and $\frac{3}{8}$ "

thickness were manufactured in Haliyal and Mundgod, and sold for Rs 4 to Rs 5 per thousand. In 1983, there were 14 factories manufacturing tiles in the district of which four factories, including a branch of the North Kanara District Co-operative Tile Factory at Kasarkod, which is working at Mirjan in Kumta taluk, are on co-operative basis, and remaining ten factories are under the control of private entrepreneurs. Employment provided in these factories varies from 35 to 200 persons. The production of tile varies from 15,000 to 48,000 and ridges from 40,000 to 1,15,000 per year. Marketing facilities for the product is spread all over Karnataka, Maharashtra, Goa and Gujarath States.

Fishery Industry

Fishing is an important occupation of the fisher folk. The mechanisation of fishing was introduced in 1955 by Somu Rumiya Thandel of Karwar and U. A. Havaladar of Kumta. During 1982-83, about 5,000 local boats, 500 modern trawlers, 100 Purse-seine boats and 400 local net boats were engaged in fishing. Tadri, Kagal Hini, Kasarkod, Tengingundi and Bhatkal are having the Boat Landing Yards. About 17 Ice Plants, five cold storage plants, three freezing plants and three frozen storages are helping the fishery activities.

The Karnataka Fishery Development Corporation has opened a Fish Manure Factory at Karwar. Besides this, Ismail Sidayabba and Company, Arga, B. N. S. Manure and Oil Factory, Kodi Beer Industries, Harwada and Shankar Annappa Mogera, Bhatkal are engaged in fish manure and fish oil pressing activities. The North Kanara District Marketing Federation has taken up the canning of fishes. The Karnataka Fisheries Development Corporation Ltd., Karwar, Binaga Ice and Cold Storage, Pvt. Ltd., Binaga, Shashank Sea Foods, Kasarkod and Honavar are engaging in exports of marine fish and products. During 1982-83, there were 17 Fish Boat Building units in the district, of which nine are in Karwar taluk, seven in Honavar taluk, and one in Bhatkal taluk. In 1983 the production was 241 million tonnes of ice, 25 million tonnes of frozen fish, 440 million tonnes of frozen storage and 297.5 million tonnes of cold storage per day.

Ship Breaking Industry

The Karnataka State Industrial Investment and Development Corporation Ltd., Bangalore, has established the ship breaking units at Karwar, Tadri and Malpe Ports in 1984 to dismantle the old

non-profitable ships and supply scraps to steel mills. This industry provides adequate employment opportunities for both skilled and unskilled labourers and supplies scraps to the re-rolling mill. The Government of India has accorded approval for purchasing second-hand ships of foreign countries through Metal Scrap Trading Corporation of India for dismantling. The long coastal line, sufficient number of ports and the adequate labour potential have stimulated the entrepreneurs to set up ship breaking yards. At present Auto and General Engineering Company, New Delhi, S.S. Steels, New Delhi and Age Consultants Pvt. Ltd., Karwar, have opened their yards at Karwar Port. Karnataka Marine Salvage Company Pvt. Ltd., Mangalore, Jawandmal Dhannamal, Bombay, have their yards at Tadri port. S.S. Steels, New Delhi, of Karwar port have procured a ship of 4,572 L D T and started the dismantling work. Auto and General Engineering Company has purchased a ship of 5,940 L D T and brought to its yard, for breaking. Each of these yards is expected to provide employment for 200 persons. The first ship taken up for breaking at Karwar was in January, 1984.

Food, Beverages and Tobacco: There were 57 small scale industrial units under the category of food, beverages and tobacco industries in the district during 1983-84. The total capital investment in them was Rs 34 lakhs and the number of persons employed in them was 277. These industries are scattered throughout the district and are manufacturing oil, oil-cake, pepperments, coffee powder, bakery products, biscuits, pickles, aerated water, etc. They are also engaged in decorticating of groundnuts, fruit processing, paddy milling and hulling, roasting and crushing of cashew, banana drying, sea foods freezing, manufacturing boiled and beaten rice, beedi-rolling, etc.

Chemical Industries: There were 84 units engaged in the production of chemicals engaging 292 workers with a total of Rs 20 lakhs as capital investment in 1983. They are manufacturing paraffin wax candles, soap chips and bars, aminoplast, plastic articles, ink and gum, polythene bags, french polish, detergent washing powder, kaolin, etc.

Paper, pulp and allied products: In 1983, there were 12 units engaged in manufacture of paper, pulp and allied products in the district. The total investment of these units was Rs 15 lakhs and they employed about 110 persons. Bamboos recieved from the forests

of the district are chipped and cooked to form pulp. It is washed and bleached. The rag pulp made out of hosiery cuttings, tailor-cuttings and ground-waste paper are mixed with pulp and for making paper, straw-boards, toys, etc. Paper envelopes, paper bags and note books are the important items manufactured by these units.

Leather and rubber products: Units of leather and rubber production are scattered throughout the district. They are manufacturing rubber products liker-stamps and are also engaged in tyre-retreading and tyre repairing. Leather goods like footwear and suit cases are produced by them. In 1983, about 45 units having about 210 workers and Rs 25 lakhs of capital investment, were engaged in the leather and rubber products in the district.

Wood Industry: The forests of the Uttara Kannada district have helped in establishing some important industries like paper mills, saw mills, plywood manufacturing units, wood carving, boat building, manufacture of agricultural implements, furniture, carts, etc. In 1983, about 85 units, having about 555 workers and Rs 45 lakhs as capital investment were engaged in wood crafts. They are scattered throughout the district and are manufacturing paper, plywood, sandal and rosewood carving, photo frame, furniture, wooden bobbins, straw board and care board, matches, household furniture and the building material like door frames, etc. The saw mills cut wood to various sizes and also do planing if required. A few small-size units are engaged in the production of carts. Many proprietors of the saw mills are dealers in timber.

General Engineering Units: The engineering industries are found mostly in and around the district and taluk headquarters. They are manufacturing RCC pipes, agricultural implements, steel furnitures, trunks, iron pots, window grills, wheel bolts, nuts, electrical goods, water tanks, knives, buckets, autorickshaw parts, etc. In addition, job works, auto repairing, battery charging, motor re-winding and repairs, radio servicing, cycle assembling and such other types of works are also undertaken. In 1983, about 97 units, providing employment for about 492 persons were engaged in engineering works in the district.

Printing Press: The printing establishments are scattered throughout the district. Most of them are power operated and employ three to four persons each. They generally undertake job works like printing of account books, bill books, exercise books, marriage

invitations, hand bills and labels, They also undertake printing and publishing of novels, and other literature, diaries, calendars and local newspapers. In 1983, about 62 units having 310 employees with a total of Rs 30 lakhs as capital investment, were engaged in printing works in the district.

Ferrous and Non-ferrous works: In 1983, about 47 units with a total of Rs 20 lakhs as capital investment employing 292 persons, were engaged in the manufacture of copper and brass utensils, copper nails, ore processing, factory spare parts, automobile parts, agricultural implements, moulding rings, domestic utensils, non-ferrous fittings and castings, machine fabrications, steel products and the like.

Ceramics and Glass Industries : In 1983, about 65 units, having 1,972 workers and with Rs 90 lakhs as capital, investment, were engaged in ceramic and glass industries in the district. These industries have been scattered throughout the district and are manufacturing glass wares, mirrors, wind screens, frames, pipes, mosaic tile frame and artistic pottery works.

Sericulture

Sericulture has been introduced in Uttara Kannada under the Western Ghat Development Programme (WGDP), during the year 1979-80. The soil and climatic conditions of the district are stated to be good for cultivation of mulberry and development of sericulture. As on 31st March, 1984, there were 476 farmers in 359 villages engaged in mulberry cultivation in the district. The area under mulberry plantation was 591.35 acres (239.5 ha) ; of this, 560.35 acres come under the WGDP and remaining 31.00 acres come in the non-Western Ghat taluks. About 65,689 layings were brushed, about 53,113 layings were harvested and 17,952.2 kg of cocoons were procured with an average of 30.4 kg per disease-free layings (DFLs). There were three extension centres functioning at Sirsi, Siddapur and Yellapur in the district. Nine chauki rearing centres under the WGDP were functioning at Sirsi, Hegdekatta, Banavasi, Ankola, Kumta, Siddapur, Honavar, Yellapur and Karwar ; and two centres in non-Western Ghat taluks were functioning at Haliyal and Mundgod. About 17 candidates were trained in sericulture under the WGDP, seven bio-gas plants were functioning and four plants were under progress during 1983-84. Total expenditure incurred on sericulture extension in the district as on March, 1984 was about Rs 5,25,063 and the amount of subsidy granted

was about Rs 41,311. Details of expenditure and subsidy under different plans and schemes were as follows

<i>Plans and Schemes</i>	<i>Expenditure (Rs)</i>	<i>Subsidy (Rs)</i>
District Plan Scheme	6,000.00	4,000.00
Grainage Seed Commercial (Non-Plan)	24,516.85	—
Karnataka Sericulture Project Plan	38,821.45	—
Special Component Plan (State Sector)	7,007.50	6,400.00
Special Component Plan (Central Sector)	4,936.05	4,518.20
Tasar Development Programme	70,003.99	—
III Farm Plan Schemes	54,056.12	—
Western Ghat Development Programme	2,54,515.72	—
II Grainage Non-Plan	4,114.80	—
III Farm Non-Plan	22,893.47	—
Cocoon Market and Range Non-Plan	12,803.70	—
Small Farmers Development Agency	26,393.00	26,393.00
Total	5,26,062.67	41,311.20

Source : Assistant Director of Sericulture, Sirsi.

The taluk-wise area in hectares and number of villages in brackets in each taluk where mulberry is introduced are as follows: Ankola 23.1 (22), Bhatkal 0.41 (1), Honavar 17.9 (24), Karwar 8.24 (16), Kumta 19.04 (20), Siddapur 21.10 (40), Sirsi 115.02 (180), Supa 3.7 (4) and Yellapur 18.31 (37), Haliyal 0.81 (2) and Mundgod 11.75 (13). Total 339.5 ha and 359 villages.

Hotel Industry

The developmental aspects of hotel industry are related to the inter-district business activities and also tourist potential. The district is not having enough boarding, lodging and restaurants to cater to the requirements of businessmen and tourists. Only a few hotels that conform to the modern standards are found at Karwar, Sirsi, Honavar and Dandeli. In rural areas most of the restaurants are without modern facilities and hygienic standards. There is wide scope for establishing a number of hotels and small restaurants as there are innumerable spots of tourist importance. This has immense employment potential too. The Kamath Chain of hotels spread all over South India is owned by men from this district. In the rural

areas, the hotel units are very small and their equipments are obsolete. At times they are "one-man shows". The restaurants in towns have a better appearance and are equipped with better furniture and utensils. In the big restaurants the number of persons employed varies with the size of the establishment and also with the number of customers patronising it. There can be separate workers to prepare snacks, mix-beverages, suppliers and cleaners.

The total number of hotels and eating houses in the district as in March 1984, registered under the Shops and Commercial establishment Act, are 357 providing employment for 1,147 persons. The minimum wages for employment in hotels and restaurants have been fixed and revised by Government. The minimum wages for the lowest category is Rs 9.50 per day and highest is Rs 500.00 per month. Only information from following individual towns was received in this office, and the number of employees in them is given in brackets.

Ankola 29 (165), Bhatkal 38 (90), Dandeli 57 (256), Gokarn 46 (140), Haliyal 8 (62), Honavar 37 (97), Karwar 58 (379), Kumta 43 (260), Mundgod 31 (122), Siddapur 42 (125), Sirsi 73 (296), Yellapur 33 (68).

Miscellaneous industries: The total number of miscellaneous small scale industries in the district in 1983 were 162. The capital investment of them was Rs 97 lakhs. They provided employment for about 1616 workers. They are engaged in the manufacture of shell lime, agarbatti, tiles, ivory and horn articles, coconut shell powder, grass and coir ropes, chalk-crayon, beds and cushions, stone polishing, stone crushing, photography and developing, lime burning, tooth powder manufacturing, etc. About 35 units with Rs 45 lakhs as capital investment and with 112 persons working were engaged in textile units in 1983. They were manufacturing ready-made garments and handloom fabric. Besides this, they also undertake dyeing and printing, fabrication and repair works.

Industrial Estates

Industrial estates have been established in various parts of the district. They provide ready-built work space, roads and other communication facilities, water and power connections, etc. The industrial estates at Dandeli and Sirsi are functioning in the district with 7.5 hectares and 8.00 hectares of area respectively. During 1982, six industrial sheds and 11 plots (out of 27 plots) have been allotted to entrepreneurs and 10 more sheds were under construction

at Dandeli. In Sirsi eight sheds and 12 plots (out of 39 plots) have been allotted and ten sheds were under construction. The Government has acquired eight hectares of land at Manki village, Kumta taluk and 24 hectares at Binaga, Karwar taluk for the purpose. Acquisition of land is being initiated in every taluk headquarters and other important industrial centres for setting up of industrial estates in the district.

Artisan Training Institute

In order to provide training facilities to the rural artisans and to rejuvenate the rural industries, the Artisan Training Institute at Kumta and a Branch at Honavar were established in 1959. They are providing training in cane and bamboo, coir craft and blacksmithy at Kumta and coir crafts at Honavar. During the period of in-service training, a sum of Rs 40 is paid as stipend to each trainee for the first 18 months and Rs 50 for each of the remaining six months. They lay emphasis on providing training to the traditional artisans in the use of improved tools and equipments and enable them to rely on their industry. The craft-wise strength of trainees from 1978-79 to 1982-83 were, 19 girls in coir, 16 girls in cane and bamboo and four boys in blacksmithy at Kumta, 30 girls in coir at Honavar in 1978-79; 11 girls in coir, 15 girls in cane and bamboo and one boy in blacksmithy at Kumta and 27 girls at Honavar in 1979-80; 16 girls in coir, 15 girls in cane and bamboo and 10 boys in blacksmithy at Kumta and 15 girls at Honavar in 1980-81; eight girls in coir and nine girls in cane and bamboo at Kumta and 16 girls in coir at Honavar in 1981-82 and five girls in coir, 12 girls in cane and bamboo and two boys in blacksmithy at Kumta and nine girls in coir at Honavar during 1982-83. The statement below shows the total value of goods produced, raw materials consumed and finished goods of the two institutes sold from 1978-79 to 1982-83.

<i>Year</i>	<i>Goods produced Rs</i>	<i>Raw-material consumed Rs</i>	<i>Finished goods sold Rs</i>
1978-79	8,006.20	6,532.00	9,559.17
1979-80	11,040.00	8,300.00	12,536.45
1980-81	6,946.79	5,720.69	8,097.94
1981-82	6,107.40	4,492.25	5,054.82
1982-83	5,127.70	3,649.82	5,180.57

Source : Artisan Training Institute, Kumta.

KHADI AND VILLAGE INDUSTRIES

The Khadi and Village Industries of the district generally use locally available raw materials. The Central Khadi and Village Industries Commission and the State Khadi and Village Industries Board help these industries. The latter body established under the Khadi and Village Industries Act of 1966, undertakes several development programmes. It is giving assistance to many units engaged in village industries pertaining to oil, pottery, soap, hand-made paper, bee-keeping, cane and bamboo works, leather industry, carpentry and blacksmithy, village lime industry, processing of cereals and pulses, khadi industry, etc. The details of financial assistance given to such units in the district during 1982-83 to 1984-85 are as given in the table on p. 415 and table on p. 416 show the taluk-wise number of Khadi and Village Industrial units during 1983.

Statement showing the total number of registered units, value of goods produced and employment as in 1982-83

Name of the Industry	No. of Units Registered	Production value (in Rs)	Employment	
			Full-time	Part-time
Processing of cereals and pulses	19	1,21,410	19	25
Village oil industry	1	30,906	1	—
Village pottery	19	9,15,021	147	08
Non-Edible oil & Soap	4	1,09,299	19	364
Hand-made paper	1	0,35,170	12	—
Bee-keeping	6	4,62,384	48	1,130
Cane & Bamboo industry	2	15,860	01	30
Leather Industry	20	8,64,320	103	21
Carpentry & blacksmithy	7	9,01,617	50	—
Gur & khandasari	10	65,000	—	450
Village lime industry	10	1,50,000	20	12
Khadi industry	1	—	02	—
Total	100	36,70,987	422	2,040

Gobar Gas Plants

One of the activities encouraged by the Khadi and Village Industries sector is popularisation of Gobar gas plants. Gobar gas plants have been set up in many villages in recent years, and their number is increasing. They are run by using cattle dung. The Central

Statement showing the disbursement of loans and grants to the Khadi and Village industries of Uttara Kannada during 1982-83 to 1984-85

Name of the Industry	1982-83		1983-84		1984-85	
	Loan Rs	Grant Rs	Loan Rs	Grant Rs	Loan Rs	Grant Rs
Processing of Cereals and Pulses	28,800	—	1,57,800	12,500	25,500	2,500
Non-Edible Oil & Soap	50,000	—	63,000	3,000	1,03,400	12,800
Pottery	5,01,450	25,550	63,700	42,700	4,22,050	89,150
Cane & Bamboo	—	—	—	—	8,800	800
Bee-Keeping	39,150	16,950	75,525	61,975	17,925	58,575
Hand-made Paper	50,000	—	—	—	—	—
Cottage Match	—	—	13,000	6,700	—	—
Carpentry & Blacksmithy	49,600	24,400	50,000	—	1,53,200	73,100
Marketing	—	—	5,000	5,000	—	—
Village Leather	47,250	5,250	6,000	—	36,500	2,500
Gur & Khandasari	—	—	67,200	8,400	—	—
Total	7,66,250	72,150	5,01,225	1,40,275	7,67,375	2,39,425

Source : Karnataka State Khadi and Village Industries Board, Bangalore.

Statement showing the Taluk-wise number of Khadi and Village Industrial units that received category-wise assistance upto 31-3-1983 in the Uttara Kannada District

Name of the Industry	Taluk-wise units assisted										Total	
	Kar-war	An-kola	Kumta	Hona-var	Bhat-kal	Sidda-pur	Sirsi	Yella-pur	Mund-god	Supa		Hali-yal
Processing of cereals & pulses	05	12	08	04	06	03	—	01	—	—	02	41
Village oil industry	—	01	—	03	01	—	01	—	—	—	—	06
Fibre industry	—	—	—	01	—	—	—	—	—	—	—	01
Village pottery	01	05	05	01	—	02	01	01	—	—	04	20
Non-edible oil & soap industry	—	03	03	01	—	—	02	—	—	—	—	09
Cottage match industry	—	01	—	—	—	—	—	—	—	—	—	01
Hand-made paper	—	—	01	01	—	—	—	—	—	—	—	02
Bee-keeping	01	01	02	01	01	01	01	01	—	—	—	09
Lime industry	03	01	04	01	—	01	—	—	—	—	—	10
Cane & bamboo industry	—	01	01	—	—	01	—	—	—	—	—	03
Leather industry	08	01	05	02	—	02	03	02	—	—	02	25
Carpentry & blacksmithy	01	—	01	02	—	01	02	01	02	—	01	11
Gur & Khandasari	01	01	—	02	07	02	—	01	—	—	—	14
Gobar gas	—	—	01	—	03	—	—	01	—	—	—	05
Other societies	01	—	—	—	01	—	—	—	01	01	—	04
Khadi industry	—	—	—	—	—	01	—	—	—	—	—	01
Marketing	—	—	—	01	—	—	—	—	—	—	—	01
Grand Total	21	27	31	20	19	14	10	08	03	01	09	163

Government has sanctioned 25 per cent subsidy on the estimated cost of each plant in order to encourage the rural people to have plants. Technical guidance and supervision for construction and maintenance of these plants are provided by the Khadi and Village Industries Commission and the State Khadi and Village Industries Board.

As on 31st March 1983, there were 616 *gobar* gas units in the district, the taluk-wise break-up being as follows: Ankola 9, Bhatkal 18, Haliyal 11, Honavar 120, Karwar 13, Kumta 115, Mundgod 28, Siddapur 63, Sirsi 149, Supa (Joida) 43, Yellapur 47; total 616. About five *gobar* gas units have drawn Rs 10,250 as loan and Rs 1,200 as grant upto March 1983 from the Khadi and Village Industries Board since its inception.

Astra oven diffusion programme: Astra Ovens are designed by the Astra team of Indian Institute of Science, Bangalore. This wood burning smokeless oven saves about 60 per per cent of firewood and also the time for cooking. The approximate cost of the oven is Rs 150 and the Government is giving Rs 50 as subsidy to each under NPDC Programme. The training for Astra Oven was imparted for a period of 12 days in all the taluks in batches of 16 each. The total number of ovens in the district at the end of March 1985 are 3,300 and their taluk-wise break-up figures are: Ankola 200, Bhatkal 300, Haliyal 200, Honavar 300, Karwar 300, Kumta 500, Mundgod 200, Siddapur 400, Sirsi 700, Supa 100 and Yellapur 100.

Apiary Industry

Apiary (bee-keeping) industry is popular in *Malnad* districts of the State. There are four varieties of bees found in Uttara Kannada district, viz., Rock-bee or *Apis dorsata*, Indian bee or *Apis indica*, little bee or *Apis flora* and Dammer bee or *Melipona*. The first variety is usually found in high forests and are very ferocious. The Indian bee is domesticated and hived. The last variety is also reared in pots by some individuals because of the high medicinal value of the honey collected by this bee. The little bee is not domesticated since its yield is very low. Bee-keeping was introduced in this district, in 1939, by the All India Village Industries Corporation. Since then this industry has developed and supplied adequate quantity of honey on orders from Bombay, Pune, Belgaum, Hubli, Dharwad and other places. Apiary is being practised in all the taluks in Uttara Kannada district. About eight co-operative societies and one registered institution functioning in this district have received

Rs 4,17,250 as loan and Rs 10,18,500 as grant since their inception up to 31st March 1983. They provided full time employment for 48 persons and part-time employment for 1,130 persons, and produced honey worth of Rs 4,62,384 during the year 1982-83.

The number of artisans engaged in important village and cottage industries in the district are as follows : 1) Carpenters 872, 2) Blacksmiths 352, 3) Potters 358, 4) Cobblers 518, 5) Stone Carvers (Sculptors) 11, 6) Metal Workers 2, 7) Wood Carvers (Sandal) 155, 8) Painters 3, 9) Basket-makers (Cane and Bamboo) 1,023, 10) Gold and Silversmiths 685, 11) Coil Workers 111, 12) Weavers 75, 13) Dhobis 10, 14) Barbers 50, 15) Oil Extractors 3, 16) Tailors 368, 17) Florists 14, 18) Others 1,196; total 5,806 (*Source*: District Industries Centre, Karwar).

Gram Seva Samiti

Uttara Kannada District Gram Seva Samiti, Ankola (1944), registered under Public Trust Act and the Companies Act with a capital of Rs 32,000 was formed by donors as life members and trustees who managed it. Now the constitution has been amended, providing participation opportunities for the working artisans in the board of management. Freedom fighters from the district like Timmappa Nayak and Vaman Hodke took initiative in starting it. This is the only institution of Khadi and Village industries in the district. Even though Uttara Kannada district is non-cotton growing area, the Samiti started khadi production in Ankola Taluk in 1944 with 100 traditional *charkas* and highest achievements upto 1955 were Rs 6,000 valued yarn, Rs 12,000 valued khadi and Rs 12,000 valued sales per year. Wooden and steel frame Ambar Charkas were introduced in this centre in 1957 and 1968 respectively. Now it has expanded its Khadi and Village Industries activities in 55 villages. Khadi bedsheets produced in this centre of 155 cm width, D T designs in white khadi, matty chikkans, etc., are in great demand from the Railways. Improved implements like hank sizing, longwarps and motion looms have been introduced, and this increased the earnings of the spinners and weavers. It provides employment opportunities to the poor, including the widows and the decrepits, at their door steps.

It performs all processes of the leather industry right from collection of carcasses, curing of hides, tanning and manufacture of foot-wears since 1961 with an annual turnover of Rs 5 lakhs.

It conducts demonstrations of new processes of production with the assistance of the Central Leather Technological Institute at Madras. It supplied leather goods to Government departments, public undertakings, ammunition shops, etc. It also produces organic manures such as bone meal out of the remains of the carcasses.

The Samiti has recently started the bee-keeping industry with one model apiary of 75 bee-boxes and 200 bee-colonies in the surrounding villages. It collects honey produced in the district through bee-keepers' co-operative societies and arranges for its processing and marketing through the Karnataka Khadi Gramodyoga Samyukta Sangha at Bengeri, Hubli, since 25 years. About 10,000 kg of honey is annually procured and sold. To provide additional employment to bee-keepers the Samiti has taken up the production of plates, cups, etc., out of areca leaves (*hale*) as they are in great demand. The Samiti has four machines for this industry and earns Rs 40,000 annually. The waste of this industry is used for the manufacture of hand-made paper. The institution has brought out a number of publications in Kannada on khadi and village industries. In 1983-84, the Samiti's total production was worth Rs 10.66 lakhs. sales Rs 9.96 lakhs, people directly employed 450, indirectly 350. The average annual income of an artisan is Rs 6,149 and Rs 4,232 in the Baad and the Bankikodla centres respectively. The daily wage earnings of each artisan is Rs 23.40 and Rs 20.80 respectively. The lowest wage earnings of a weaver is Rs 10.40 per day and spinner is Rs 3.60 to Rs 4.50 per day. It runs a mini rice mill at Bilgi.

Other Cottage and Village Industries

Blacksmithy : The traditional carpenters themselves do the work of blacksmithy in the district. Every village carpenter caters to the needs of the village in respect of iron implements. Small *karkhanas* doing entirely blacksmithy are to be found at Karwar, Ankola, Kumta, Honavar, Sirsi and Siddapur. Here they repair the sugar cane crushers and other smithy works like welding, repairs, etc. These are mostly self-owned and self-managed. These smiths take orders for preparing agricultural implements such as plough share, spade, cart and water wheels, sickle, etc. The agriculturists take the raw materials for the articles they want and get them prepared on payment of contracted wages. An agricultural family pays annually a fixed quantity of paddy to the blacksmith who prepares all implements and tools, required by the family during the year and repairs them. The blacksmiths also prepare knives, pad-locks,

sickles, etc. During 1982-83, there were seven blacksmithy and carpentry societies providing employment for 10 artisans and produced goods worth Rs 9,01,617. These societies have drawn Rs 3,37,350 as loan and Rs 76,030 as grant since their inception, to 31st March 1983.

Cane and Bamboo Industry : The workers engaged in cane and bamboo industry are mostly known as Medars. They are to be found in Nandangadda, Karwar, Ankola, Gokarn, Kumta, Honavar, Haliyal, Malgi, etc. They generally prepare bamboo mats, cane baskets, cane chairs, etc. During 1982-83, there were two Co-operative units which produced Rs 15,860 worth articles, and drew Rs 26,125 loan and Rs 10,125 grant from Khadi and Village Industries Board.

Carpentry : Carpentry is being pursued in almost all villages. The village carpenter is mostly engaged in preparing agricultural implements, household and building materials. In prominent centres like Sadasshivgad, Karwar, Ankola, Kumta, Honavar and Sirsi, furniture and other articles are also produced. The carpenters are mostly Hindu Vishwakarmas and Christians. Of late others are also taking interest in the craft, especially in wood turning and furniture making. Boats, carts, bee-boxes, motor body building, etc., are undertaken both by individual carpenters or a group, or by the *karhannas*. Carpentry work is also done on co-operative basis, and some societies undertake both carpentry and blacksmithy work.

Another group of wood workers are Gudigars who are engaged in the production of sandal wood and rose wood images and other works of art. There are three co-operative societies of these craftsmen at Kumta, Sirsi and Honavar, and they supply raw materials of the craftsmen and arrange for marketing.

Coir Industry : Coir industry has a great potentiality for development since coconut plantations are abundant in the coastal areas and on river banks. This is the part-time work of the petty land-holders, tenants, and hereditary occupation of the sub-caste known as Bhandaris, Namadharis, Christians, etc. Coir is extracted by reeling the coconut husk. In Honavar area a few middle men have taken to the sale of coir products as business and there is a weekly coir shandy at the town. In other places concerns are managed independently as a spare time occupation. The prominent working centres are Honavar, Gangavali, Tadri, Aversa, Chendiyi and

Kodibag. Women attend to the work of beating the retted husk into coir and spinning the yarn. Tools used are different in different processes. Improved types of tools used are willowing machines for clearing coir, spinning wheels for spinning yarn and rope making machines. Processes of production take place when coconut husk is retted under mud for six to twelve months, retted husks are beaten and coir is extracted. After cleaning coir on willowing machine, coir is spun into yarn either by hand or spinning wheels, making rope by hand or machine. Yarn and rope are the main products for the production of matting, foot rugs, hand bags, etc.

Copper and brassmithy: The centres of this craft are Kumta and Honavar. The sub-castes engaged in this industry are Namadharis and Muslims. There are *karkhanas* which employ workers on piece work basis and market the produce. The owner of the *karkhana* supplies the workers raw materials like metal sheets, etc., to work at his own house. A copper smiths' co-operative society at Kumta is the biggest centre for this industry in the district.

Goldsmithy: Goldsmithy is an industry mostly carried on by the hereditary workers known as Daivajnya Brahmanas who are scattered all along the coastal line and mostly centred in Baad and Kadwad near Karwar, Aversa, Kumta and Haldipur. Other villages too have one or two families of these. Their establishments are mostly self-owned and self-managed. Aversa is famous for gilded articles, from where thousands of pairs of ear rings are being exported to Bombay, Bangalore, Hyderabad, etc. Since goldsmiths are working against orders and wages, large capital is not necessary. Some prepare ready-made ornaments and keep the same for sale. A co-operative society of this artisans has been organised at Aversa. It provides raw materials and gets article prepared and sells them to the wholesale merchants.

Lime Industry: Lime industry is carried on by Uppars. They collect oyster shells and burn them in kilns and prepare lime. It is a seasonal occupation limited to the period between November to April every year. Apart from the Uppars some persons from the Nadavar and Namadhari communities also take to this profession at Tadri, Sanikatta, Gokarn and Nandangadda. The main centres of this industry are Honavar, Kumta, Karki, Madangeri, Hegde, Haldipur, Mudgeri, Nandangadda, etc. As the industry is seasonal, the workers

take to stone cutting and masonry during the rainy season. The establishments are self-owned and self-managed by the heads of the families.

During 1982-83 about ten units of village lime industry have provided full-time employment to 20 and part-time employment to 12 produced Rs 1,50,000 worth lime. They have also drawn Rs 44,000 as loan and Rs 18,500 as grant upto March 1983 from the Khadi and Village Industries Board.

Oil Pressing : Oil is pressed mainly from coconut and *undi* seed. Though the *ganas* (indigenous oil press) continue to exist, oil extraction is being gradually taken over by mechanised mills and this cottage industry is rapidly declining. Oil is extracted from the oil seeds supplied by the customers. The village *ganas* are working mostly to meet the needs of the villages. *Undi* seed is still pressed by village *ganas*. The workers engaged in this industry are mostly of the to Gániga caste and Christians. The main centres where these persons are to be found are Sadashivgad, Ankola, Bankikodla and Karki. Individual workers are also found scattered in villages in other parts, mostly on the coastline. Some of the village oil pressers have drawn a total of Rs 57,050 loan and Rs 19,705 grant upto 31st March 1983 from the Khadi and Village Industries Board, since its inception. In Ankola taluk, the Keni Co-operative Society produced Rs 30,906 worth oil during 1982-83.

Pottery : Unglazed pottery work is carried on by the hereditary workers called Kumbars throughout the district. The workers employed in this industry carry on agriculture during rainy season as the pottery work is carried on from November to May end. Prominent centres in this industry are Halkar, Kajalli, Vanalli, Kekkar, Baad, Valgalli, Karki, Haldipur Bengre, Mundolli, Haliyal, Kumbarkop, Chendiye and Majali. They prepare all types of country vessels, and bricks and tiles. Tiles and bricks are manufactured against orders received from the customers. Fancy crockeries are in great demand. Some of the co-operative societies and individual artisans in this industry so far have drawn Rs 15,40,555 loans and Rs 66,925 grant upto 31st March 1983, from the Khadi and Village Industries Board since its inception. About 19 units have provided 147 part-time employment and produced Rs 9,15,921 worth goods during the year 1982-83.

Tanning and Leather work : Tanning and leather work are

undertaken by the Chamars, who do tanning and leather working. Shoe makers purchase raw-hides from the flayers known as Bhangis, tan them personally and use them for their work. Leather is also procured from Hubli and Dharwad. The crome and other fine leather required are also procured from outside. The Dhors at Haliyal who are purely tanners are better off than the Chamars. About 20 units providing full-time employment to 103 and part-time employment to 21, and producing Rs 8,64,320 worth goods during the year 1982-83, have drawn Rs 3,13,100 as loan and Rs 59,000 as grant upto 31st March 1983 from the Khadi and Village Industries Board since its inception.

Miscellaneous : Other cottage industries in this district are processing of cereals and pulses, handloom weaving, hand-made paper, match industry, gur and *khandasari*, non-edible oil and soap, dyeing and printing, button and horn work, preparing fire works, etc. Buttons and horn works are also in demand. During 82-83 there were 18 units of processing of cereals and pulses which employed 19 full time workers and 25 part-time workers and produced Rs 1,21,410 worth goods. They have drawn an amount of Rs 10,83,875 as loan and Rs 65,221 as grant upto 31st March 1983 from the Khadi and Village Industries Board since inception. Registered artisans of non-edible oil and soap industry are four in number and they employed 19 full-time workers and 364 part-time workers during 1982-83 and produced goods worth Rs 1,09,299. They have drawn an amount of Rs 3,68,000 as loan and Rs 27,670 as grant upto 31st March 1983 from the Board. Gur and *khandasari* is another important cottage industry in this district. They are ten in number and received Rs 54,540 as loan and Rs 10,800 as grant from the Board upto 1983, and they provided part-time employment to 450 and produced goods worth Rs. 65,000 during 1982-83. Adarsha Gramodyoga Sangha, Keni, Ankola Taluk, has started production of matches. It has drawn Rs 91,000 as loan and Rs 4,200 as grant upto 31st March 1983 from the Board. Khadi sales Depot of Siddapur has drawn Rs 1,15,572 as loan and Rs 28,145 as grant from the Board upto March 1983. Registered hand-made paper units in the district are two in number and they have drawn Rs 3,50,000 as loan and Rs 10,500 as grant upto March 1983 from the Board. Other than these industries, fishing in the coastal area, beedi rolling and wood cutting throughout the district have been providing employment opportunities to many.