

CHAPTER V
INDUSTRIES AND POWER

AS in 1983, the number of factories in Karnataka was 5,602 with fixed capital of Rs.1,94,874 lakhs. The productive capital was Rs.2,90,314 lakhs and the number of factory workers was 3,03,183. The respective figures for the neighbouring states for 1983-84 is given in the table below.

Table No.5.1

<i>Particulars</i>	<i>Andhra Pradesh</i>	<i>Tamilnadu</i>	<i>Maharashtra</i>
Factories	11,837	11,918	14,546
Fixed capital (Rs.lakhs)	2,88,732	3,36,816	7,75,155
Productive capital (Rs.,lakhs)	3,86,200	5,02,769	11,22,838
Workers	6,38,592	6,52,365	9,26,323

Source: Karnataka Prospective Plan 2001- page 210.

As in 1991-92, there were 7,007 factories in Karnataka which mark an increase of 25 per cent over a decade. The road network which has been considerably improved has also made the State to prosper industrially. It has also been pointed out that the exploitation of natural resources in the state is considerable. Karnataka does not conform to the average picture of the neighbouring states. For example our state is relatively less capital intensive. The State's share in the total invested capital in the country was only 4.2 per cent, its share in the net value added was 5.6 percent.

Manufacturing/household industries accounted for 4.10% (against all-India average of 3.47%) of the main workers in Karnataka. Some of the other major industrial states had a lower proportion of main workers in manufacturing (Gujarat 2.43%, Maharashtra 3.62%), though in services these two states had a much higher proportion of main workers at 37.45% and 41.49% respectively compared with Karnataka figure of 30.87%. During this decade, more of institutional investment has been made, compared to the unregistered sub-sectors. However, the total contribution towards manufacturing units has remained

constant, which indicates that investment is more centred on the registered and organised sector than on the unregistered sector.

The economic census 1981 also revealed that there were 7.82 lakh persons employed in establishments using hired labour in the non-agricultural sector in the rural areas of the State. Besides rural artisans in the unregistered manufacturing sector, some small scale units (all of them not registered) are also existing. During this decade 82,480 small scale industrial units with an employment of about 6.37 lakhs have been reported to be registered with the authorities. These are called modern segment of the small scale sector. As in 1988-89, there were 530 large and medium scale units in both the public and private sectors, and in 1992-93 these were 723 with an investment of Rs.6,07.162 lakhs and with an employment of 2,77,457. These include 58 public sector units belonging to the State with an investment of Rs.3263 crores (an increase of Rs.1354 crores in five years). Of the total plan investment, about 55 per cent is in the power sector (Power Corporation Rs.1,197 crores and Electricity Board Rs.574 crores).

More trained technical and scientific man power has been employed in the state by the modern industries.

State Industrial Policy (1983)

A new industrial policy was evolved in the State in 1983, which gave priority to rural industrialisation. The main proposals were (a) to extend due support to nearly 5 lakh skilled rural artisans, (b) to support the processing of local agricultural commodities and animal wastes in order to generate income and employment in rural areas, (c) to pay prior alternative to agro processing, intensive development of wool, edible oil, etc. and (d) to curb the expansion of high tension industries.

In a short span of time, this new policy yielded favourable results. The gains being (a) curbing the growth of power-oriented industries, (b) concentration of medium and large scale industries in and around Bangalore being minimised, (c) a phenomenal growth in the small scale industries, and (d) starting a single-window facility for the speedy disposal of proposals from entrepreneurs for starting industries.

Despite some favourable results, it is argued that there were some marked short-comings in the basic constituent of the policy. There was no dynamic programme to assist artisan-based industrial network at the rural level, it is said. Relatively, the progress in rural industrialisation was poor compared to the stress laid on it. These rural industrial activities were neglected in recent past when the State was beleaguered by continuous and severe drought. Industrial growth process in the State remained largely Central-initiative-oriented or entrepreneurs' intensive. The urban entrepreneurs, who are fairly well endowed with resources and capabilities make the most of the policy since the attention and resources of the industrial administration continues to be largely concentrated in urban areas.

In order to overcome urban concentration, decentralisation of power has been resorted to by starting Zilla Parishads. However, it will take time for the rural artisans to take advantage of this since the representatives of the decentralised bodies are not well versed with industrial problems and promotion of industries as they are seized with the promotion of agricultural and allied activities. But improvement of roads is sure to add to the infrastructure facilities.

Still the State Industrial Policy 1983 did have its effect on the industrialisation. The following table shows the industries in small scale sector as in 1983, 1987 and 1993 (districtwise).

Table No.5.2

Position of Industries in the State.

Sl. District	Position as on 31.3.83			Position as on 31.12.87			Position as on 31.3.93		
	No. of Units	Investment	Employment	No. of Units	Investment	Employment	No. of Units	Investment	Employment
1. Bangalore (U & R)	11075 32.40	13634 39.00	136590 35.2	18196 22.1	20532 28.3	174309 27.4	5116 26534	3907.01 39852.01	26258R 240047U
2. Belgaum	1744 5.1	1692 4.8	14243 3.7	7150 8.7	4899 6.8	35484 5.6	11982	10267.39	54513
3. Bidar	563 1.6	317 0.9	5090 1.3	1781 2.2	1304 1.8	11746 1.8	3085	4445.20	19209
4. Bellary	1322 3.9	584 1.7	6355 1.6	3500 4.2	1327 1.8	18306 2.9	5430	2996.64	25516
5. Bijapur	1076 3.2	455 1.3	11887 3.1	2910 3.5	1686 2.3	20802 3.3	5079	3365.46	30852
6. Chitradurga	1480 4.3	899 2.6	9827 2.5	3178 3.8	2347 3.2	18798 3.0	5226	6612.31	29875
7. Chikmagalur	511 1.5	299 0.9	3586 0.9	1504 1.8	800 1.1	8560 1.3	2457	1716.53	12177
8. Dharwad	2417 7.1	1891 5.4	21829 5.6	7332 8.9	5387 7.4	44476 7.0	11472	11817.97	110712
9. Dakshina Kannada	2300 6.7	3981 11.4	63064 16.2	5618 6.8	9313 2.8	86907 13.6	9544	15270.81	63659
10. Gulbarga	793 2.3	578 1.7	7130 1.8	2512 3.0	1428 2.0	14935 2.3	4492	3849.38	25244
11. Hassan	727 2.1	514 1.5	5133 1.3	1855 2.2	1328 1.8	10831 0.17	8051	2265.23	15725
12. Kolar	1490 4.4	952 2.7	107722 2.8	3214 3.9	2410 3.3	21766 3.4	5050	5975.83	34736
13. Mysore	2702 7.9	2436 7.0	20053 5.2	7935 9.6	4981 6.9	49041 7.71	12087	7961.04	72033
14. Mandya	871 2.5	565 1.6	5474 1.4	1952 2.4	1230 1.7	11700 1.8	3052	2549.61	17156
15. Raichur	810 2.4	1717 4.9	19065 4.9	2562 3.1	3301 4.6	27893 4.4	4527	6043.02	36432
16. Tumkur	1352 4.0	1164 3.3	16637 4.3	4467 5.4	4183 5.8	32785 5.1	8169	9023.82	51766
17. Shimoga	1762 5.2	1874 5.4	12479 3.2	4223 5.1	3894 5.4	22203 3.5	6922	6221.44	32371
18. Uttara Kannada	745 2.3	474 1.4	8514 2.2	1639 2.0	919 1.3	13588 2.1	2589	2103.25	18555
19. Kodagu	418 1.2	903 2.6	10436 2.7	955 1.2	1103 1.6	12963 2.0	1543	1518.37	15114
Total	34158 100.0	34947 100.0	388114 100.0	82480 100.0	72466 100.0	637173 100.0	137407	147262.96	96932950

Source: Karnataka Prospective Plan 2001, Government of Karnataka - Department of Industries and Commerce (Figures in second line give the percentage of the State's total)

Table 5.3**The Small Scale Industries Registered from 1982-83 to 1992-93**

<i>Sl. District No.</i>	<i>No. of SSI Units as on</i>		
	<i>March 83</i>	<i>March 87</i>	<i>March 93</i>
I. Category A			
1. Bidar	563	1590	3085
II. Category B			
1. Dharwad	2417	6777	11472
2. Mysore	2662	7203	12087
3. Raichur	810	2236	4527
III. Category C			
1. Belgaum	1924	6307	11982
2. Bijapur	1116	2707	5079
3. Dakshina Kannada	2300	5077	9544
4. Gulbarga	793	2226	4492
5. Hassan	727	1673	8051
6. Tumkur	1352	3942	8169
7. Uttara Kannada	745	1485	2589
IV. Other Districts			
1. Bangalore Rural	4251	865	5116
2. Bangalore Urban	9959	16144	26534
3. Bellary	1322	3137	5430
4. Chikmagalur	511	1357	2457
5. Chitradurga	1480	2872	5226
6. Kodagu	416	572	1543
7. Kolar	1490	3003	5050
8. Mandya	871	1799	3052
9. Shimoga	1762	3892	6922

Bangalore Urban & Rural districts were bifurcated in Oct.1986

Village Industries

In the Industrial Policy of 1983, the major thrust was the expansion of village industries in the State. As in 1984-85, there were 43,560 registered small scale units with a total investment of Rs.418 crores providing employ-

ment to 46 lakh persons. In addition, there were about 2.6 lakh unregistered small scale units providing employment to about 11.7 lakh persons. This unregistered sector faced problems like uncompetitiveness on account of out-dated technology, uneconomic scales of operation, lack of entrepreneurial skills, difficulties of ensuring timely and adequate inputs and marketing. In order to overcome these deficiencies, the Industrial Policy resolution of the State gave a major thrust of industrial development during the VIIth plan. It was estimated that the promotional programmes and expansions envisaged by the Industries Department would create additional employment opportunities to 1.9 lakh persons particularly in Khadi and Village Industries and 7.2 lakh in Tiny and Small Scale Industries. The programme consisted of providing work-sheds, technology improvement, assured and timely supply of various inputs and a robust marketing infra-structure. A total outlay of Rs.147.18 crores was set apart for village and small scale industries in VIIth plan. Targets proposed were to establish 25,000 khadi and village industrial units, 60,000 village and small scale units, 12,000 industrial sheds, 5,625 common work-sheds and living-cum-work-sheds, establishment of one Entrepreneurship Development Institute, one Leather Technology Institute and one Handloom Technology Institute.

Karnataka Industrial Area Development Board (KIADB)

Karnataka Industrial Area Development Board is playing a vital role in accelerating the industrial development in the State by providing basic infrastructural facilities such as land, water, power, housing, common facilities etc. This Board will be the nodal agency for development of growth centres at Hassan, Dharwad and Raichur which have been selected in consultation with the Government of India. An exclusive export-oriented Industrial Zone is being developed near Bangalore. Infrastructural facilities for the proposed Mangalore Oil Refinery and other projects are being planned to be provided at Mangalore. An outlay of Rs.2,400 lakhs has been provided in the VIIIth plan for this.

This board has acquired about 7000 acres of land by December, 1991 and has developed 300 acres of land and has allotted to 345 industrial units. In 1992-93, a sum of Rs.938 lakhs was sanctioned to develop basic amenities and has been utilised for developing by the export Promotion Council at Bangalore and Industrial area in Dharwad. This is a main organisation to provide basic facilities in the 'No-Industry District' of Bidar.

Karnataka State Industrial Investment and Development Corporation (KSIIDC)

This is an agency for promotion of large and medium industries. This corporation provides escort services for the projects cleared in the State level single window agency for speedy implementation of the projects. By the end

of Dec.1992, this corporation has sanctioned Rs.100 crores as loan and has granted Rs.9.00 crores for about 100 projects as Equity. This board also provides escorts service to the industrial establishments sanctioned through single window agency for speedy implementation. Accordingly, 64 proposals have been cleared off by the corporation in 90-91. This is also a nodal agency for the Non-Resident Indian to provide assistance for starting industrial projects.

Karnataka State Electronics Development Corporation (KEONICS)

KEONICS has been working for the promotion of electronic industries in the State by participating in the joint venture and providing infra-structural facilities required for the industry. It has promoted an Electronic City in Bangalore and has proposals to promote such electronic cities in Mysore, Dharwad in association with KIADB. Joint venture companies produce hybrid micro circuits, mini computers, micro processing based systems, printing circuit boards, TV picture tubes (Black and White), telephone instruments and process control instruments.

Government Tool Room and Training Centre

This is one of the premier institutions in the country devoted to technological excellence in the field of tool making. With the introduction of CAD/CAM systems, the capabilities of centre have been enhanced and up graded in tooling and machining areas. A sub centre of GTTC at Mysore is being established with an estimated cost of Rs.1712 lakhs.

Central Institute of Plastics Engineering Technology

Central Institute of Plastics Engineering Techology, Madras has evinced interest in establishing an extension centre at Mysore with an investment of Rs.450 lakhs; of which, Government of Karnataka is investing Rs.225 lakhs.

Entrepreneurial Development Institute

This institute has been established at Dharwad with the following objectives: (1) to identify, select, motivate, and develop training potential for local persons in the State, (2) to plan and systematically organise Entrepreneurship Development Programme at various places in the State, (3) to provide technical, managerial and technological expertise and know-how to the entrepreneurs, (4) to improve, support and strengthen the existing E.D.P activities in the State and (5) to provide extension service to the trained entrepreneurs and self-employed personnel. An Outlay of Rs.150 lakhs has been provided in the VIIIth Plan. In 1992-93, 381 persons were trained.

Centre for Technology Development.

The Centre for Technology Development at Bangalore has been registered as a society under the Societies Registration Act. The Centre will provide opportunities for the local entrepreneurs for interaction and acquiring new

technologies and also to get the best equipment or instruments for their experiments and research.

Karnataka State Bureau of Public Enterprises

The KSBPE functions in three areas viz., Recruitment and Training of the Executives of the Public Sector Enterprises; Investment Appraisals, Examination of the proposals relating to the investment of Rs.50 lakhs and above of the public sector enterprises, and continuous monitoring of the performance of the public sector enterprises. There are 61 State Public Sector Enterprises in the State which are either statutory organisations or enterprises in which the share of the State Government is more than 51% of the total paid-up share capital.

The different categories of public sector enterprises are :

Development Enterprises	19
Service Enterprises	8
Marketing Enterprises	5
Production Enterprises	22
Companies formed under special statutes	4
Deemed Government companies	3
Total	61

Karnataka State Handicraft Development Corporation

This corporation provides the following facilities to encourage the artisans and artists: 1) Occupational Complex, 2) Raw material depot. 3) Sales through exhibitions, 4) Purchase of ready-made articles, 5) General facility centres, 6) Providing improved equipments and 7) Providing loans through Banks. In 1990-91, this corporation has brought 166 additional craftsmen under its jurisdiction. Training and production centres have been opened at Channapattana, Mysore, Sagar, Kinhal and Naval Gund for 248 craftswomen. Under Dutch assistance 380 workshops and houses have been completed.

The Corporation has procured finished goods worth of Rs.126 lakhs from Craft persons and sold goods worth of Rs.485 lakhs (in 1992) and has exported items worth of Rs.70 lakhs.

Karnataka Handloom Development Corporation

This corporation protects the interests of the weavers who are not covered by co-operative sector. KHDC helps the weavers by giving training, by providing improved weaving equipments, and by providing raw materials and also to help marketing the products. In 1990-91, KHDC had brought 654 handlooms under its control. By 1991 March, total was 32,979 handlooms were under the control of KHDC. Total production of cloth was 251.83 lakh metres,

by the end of March 1991. *Sarees* and *panches* are given to green card holders at concessional rate by the corporation.

Karnataka Coir Development Board

This board has been formed to produce curled rope and one unit under a joint venture to produce materials made of rubberised coir has also been started at Tumkur. By 1991 March, the Board has given financial assistance to 639 units and has trained 2,022 persons, and by 1992 (Dec.) the corporation has assisted setting up of three coir complex, spinning units and trained 1932 persons.

Add to Part I, page 811 onwards

Sugar Industry

Sugar Industrial Units are existing in the state in three sectors. (1) Co-operative sector, (2) Public Sector and (3) Private Sector. As in 1993, there were 17 sugar factories in co-operative sector, two each in public sector and joint sector and 9 in private sector. Out of a total 30, 29 are working. Belgaum district has maximum number of factories viz. six.

As in 1992, the total sugarcane grown in the state was 180 lakh metric tonnes of which about 50 per cent have been utilised by factories and the remaining has been used to produce jaggery and khandsari sugar. Out of 29 factories working, nearly 56450 metric tonnes of sugarcane is being crushed and by the end of VIII Plan, there is a proposal to increase the crushing capacity to 1,15,200 metric tonnes. The sugar production in Karnataka was 4.99 lakh mts. in 1981-82, 4.90 lakh mts. in 1985-86, 7.60 lakh mts. in 1989-90 and 8.93 m.tonnes in 1991-92. It was 91.02 lakh mts in India and 6.60 lakh mts. in the state in 1987-88.

The quantity of sugarcane crushed, sugar manufactured and percentage yield for the years 1989-90, 1990-91 and 1991-92 respectively are as follows: 1989-90 -77.69 lakh mts, 8.05 lakh mts, 10.07%; 1990-91 89.84 mts, 9.02 lakh mts and 10.25%; and 1991-92.25 lakh mts, 10.35 lakh mts and 10.54%.

The procurement price of sugarcane was fixed at Rs.360 per tonne in 1991-92. This fixation is based on the 8.5 per cent return of the sugarcane. There are 65 khandasari units in the State; of which, 23 are functioning (1991-92). These units crush about 9 to 10 lakh m.tonnes of sugarcane producing 60,000 m.tonnes of sugar annually. In 1990-91, out of 15 co-operative sector sugar factories, 12 factories have together obtained a profit of Rs.60,849 lakhs and three factories have suffered a loss of Rs.104.71 lakhs. Out of the four public sector sugar factories three have made profit, and out of 8 private factories four have made profits. A separate Directorate for sugar has been established to look into the administrative as well as financial matters.

Establishment of New Sugar Factories: Government of India has granted letter of intent for the following three sugar factories under co-operative sector: (1) Bhagyalaxmi Sahakari Karkhane Niyamit, Khanapur, Belgaum District; (2) Krishna S.S.K. Ltd., Athani, Belgaum District; and (3) Naranja SSK Ltd. Bidar, Bidar District.

In the State, there is a conducive agro-climatic condition for cultivation of sugarcane. Presently, sugarcane production in the State is around 182 lakh mts in 1992-93 as against 185 lakh mts in 1991-92. Out of the total production, the existing crushing capacity is able to cover 50 to 60% of the cane. On account of this, there is a scope for establishment of new sugar factories. There is surplus sugarcane production in Bijapur, Belgaum, Shimoga, Mandya, Bidar and Mysore district and the State Government has recommended the following 11 proposals to Government of India for issue of letter of intent out of 62 applications received. The 11 proposals recommended are from Mudhol, Terdal, Chikkapadasalagi, Indi (all in Bijapur dist.), Bhalki (Bidar dist) and one in Belgaum tq, all in co-operation sector, and from Haliyal (U. Kannada), Basavana Kalyan (Bidar dist.), Bannur (Mandya dist) Honnali (Shimoga dist) and one in Bijapur dist, all in private sector.

During 1992-93 season, the State had experienced a surplus sugarcane production mainly in Mysore, Mandya, Belgaum and Bijapur Districts. In the interest of the farmers, the sugar factories of Tamilnadu were permitted to take cane from Mandya and Mysore Districts. Similarly, the sugar factories of Maharashtra were permitted to take surplus cane from Bijapur and Belgaum districts. Also the Government waived off Purchase Tax on the sugarcane purchased by the sugar factories of Maharashtra and Goa.

In several cases of the sugar factories, purchase tax dues to the Government have been converted into interest free loan by the Government. The total amount of purchase tax dues converted into interest free loan is Rs.3562.34 lakhs. Out of this, Rs.574.86 lakhs has already been recovered.

Revenue to the State Government from Sugar Industry: (1) Purchase Tax at 8% *ad valorem* on sugarcane purchases by the sugar factories and khandasari units; (2) Turn-over Tax at 2.5% w.e.f. 1.4.92 on sugarcane purchased by the sugar factories and khandasari units. (3) State share from out of excise duty being levied by Government of India on sugar; (4) Tax on molasses produced by the sugar factories and also tax on alcohol; and (5) Renewal fees paid by the sugar factories and khandasari units.

Sugar Development Fund: On every quintal of sugar being sold by the sugar factories Rs.14.00 is being deducted and passed on to the Sugar Development Fund which is under the custody of Government of India. Out of this fund, Government of India sanctions loan to the needy sugar factories

at 9% interest, for the purpose of sugarcane development and expansion-cum-modernisation programmes.

So far (March 1993) Rs.2859.59 lakhs has been sanctioned to 16 sugar factories and out of it, Rs.1193.73 lakh has already been released for the purpose of sugarcane development.

The following is the list of sugar factories and their crushing capacity in the state (1992).

<i>Sl. Name of factory No.</i>	<i>Capacity (m.tons.)</i>
A. Co-operative Sector:	
1. Aland Co-operative Sugar Factory Ltd. Aland, Gulbarga Dist.	1250
2. Bidar Co-operative Sugar factory, Hallikhed, Bidar Dist.	2000
3. Bhadra Co-operative Sugar Factory, Davangere Chitradurga Dist.	1250
4. Dakshina Kannada Co-operative Sugar Factory, Brahmavar	1250
5. Doodganaga Krishna Co-operative Sugar Factory, Chikkodi Belgaum Dist.	2000
6. Ghataprabha Co-operative Sugar Factory, Gokak, Belgaum Dist.	1250
7. Sri Halasiddanath Co-operative Sugar Factory, Nippani, Belgaum Dist.	1250
8. Hemavathi Co-operative Sugar Factory, Hassan	1250
9. Hiranyakeshi Co-operative Sugar Factory, Sankeshwar, Belgaum Dist.	5000
10. Kampli Co-operative Sugar Factory, Kampli, Bellary dist.	1250
11. Karnataka Co-operative Sugar Factory, Haveri, Dharwad dist.	1250
12. Malaprabha Co-operative Sugar Factory, M.K. Hubli	3500
13. Pandavapura Co-operative Sugar Factory, Pandavapura Mandya dist.	1500
14. Raibagh Co-operative Sugar Factory, Raibagh, Belgaum dist.	1250
15. Sri. Sri Rama Co-operative Sugar Factory, Chunchanakatte, Mysore dist.	1250
B. Public Sector (Joint Sector) (Working);	
16. My Sugar Co., Ltd., Mandya	5000
17. Mysore Sugar Mills, Bhadravati, Shimoga dist.	2500
18. Davangere Sugar Works, Davangere, Chitradurga dist	1250
19. Gangavathi Sugars, Gangavathi, Raichur dist.	1500
C. private sector (working)	
20. Sri Chamundeshawari Sugar, K.M. Doddi, Mandya dist.	4000
21. Gowribidanur Sugars, Gowribidnur, Kolar dist.	1250
22. ISR, Hospet, Bellary dist.	2000
23. Mahadeshwara Sugar Works, Kollegala Mysore dist.	1250
24. Siraguppa Sugars, Siraguppa, Bellary dist.	1500
25. Godavari Sugar Works, Samirwadi, Bijapur dist.	1550
26. Tungabhadra Sugar Works, Shimoga	2500
27. Ugar Khurd Sugar Works, Ugarkhurd, Belgaum dist.	5000
28. Salarjung Sugar Mills, Munirabad, Raichur dist.	NA

NEW INDUSTRIAL POLICY (1993)

The Industrial Policy of 1990 is valid upto 1995. However major structural reforms have been brought about in the economic, industrial and trade policies by the Government of India in the last two years. A congenial atmosphere for industrial development with less hindrance in the form of licensing and locational restrictions has been created. In order to shape the industrial policy and incentive offered in tune with what has been envisaged by the Government of India and what has been prevailing in neighbouring States, a new industrial policy 1993 has been outlined. The salient features are:

1. Re-structuring package of incentives and concessions to promote development of industries in all scales - tiny, small, medium and large.
2. Identifying some taluks as "Developing Areas" to make them eligible for incentives and concessions.
3. Giving special thrust for promotion of Mega Projects which have scope for development of Ancillaries and Down Stream Industries. Projects of Rs.100 crores and above to be given tax concessions and facilities on the merits of each case.
4. Offering capital investment subsidy to tiny and small scale industrial units and sales for extending exemption or deference of sales tax for tiny/small/medium and large industries.
5. Creating Nodal Authority to manage and maintain industrial areas and estates in important locations; this authority has to take care to improve and strengthen power, water supply, and telecommunication facilities in these areas.
6. Infrastructural development agencies of the State namely KSSIDC, KIADB and KEONICS to develop the specialised industrial estates/areas, with full compliment of infrastructural facilities.
7. Conversion of agricultural land to industrial land in identified zones of the respective Municipal/Town Planning Authorities without the prior approval of the Government.
8. It has been proposed to empower the Deputy Commissioner and the Commissioner for Industrial Development and Director of Industries and Commerce to grant urban land ceiling exemption.
9. To strengthen and streamline the Single Window Agency Mechanism, Karnataka Udyog Mitra (KUM) to act as the Secretariat for the Single Window Agency.
10. Developing Industrial townships around Bangalore region in

Kanakapura, Ramanagaram, Tumkur, Doddaballapura, Malur and Kolar.

11. Promotion of exports from the State of electronic goods, software, ready-made garments, leather garments, gems and jewellery, agri-horticultural products including processed foods. Following measures have been proposed with this in view:

- i) Setting up of Export Promotion Industrial Park.
- ii) Strengthening the Visveswaraya Industrial Trade Centre to function as an effective Export Promotion Organisation.

12. In order to boost the Artisan and Khadi and Village Industries Sector, the products manufactured in this sector are proposed to be exempted from payment of Sales Tax.

In the light of the new industrial policy the definitions of certain terms have been changed as detailed hereunder with effect from July 1993.

1. *Tiny Industry*: Is one in which the investment in Plant and Machinery is less than Rs.5.00 Lakhs irrespective of the location of the unit.

2. *Small Scale Industry*: (a) An Industrial undertaking in which the investment in fixed assets in plant and machinery whether held on ownership terms or on lease or by hire purchase does not exceed Rs.60 lakhs. (b) In case of industrial undertaking as in (a) the limit of investment in fixed assets in plant and machinery shall be Rs.75 lakhs provided the unit undertakes to export 30 per cent of the annual production by the end of 3rd year from the date of commencement.

3. *Ancillary Industry*: An industrial undertaking which is engaged or is proposed to be engaged in the manufacture of parts, components, sub-assemblies tooling or intermediates, or rendering of service and the undertaking supplies or renders or proposes to supply or render not less than 50 per cent of its production of services as the case may be, to one or more other industrial undertaking and whose investment in fixed assets in plant, machinery whether held on ownership terms or on lease or on hire purchase, does not exceed Rs.75 lakhs.

4. *Medium and Large Scale Industry*: An industrial unit which is not classified as Tiny/SSI shall be classified as Medium/Large Scale Industry.

Textile Policy - 1993

In Karnataka cotton is grown abundantly, with many varieties including Lakshmi, Varalakshmi, Jayadhara, DCH and Hampi Sea Island. Cotton production in the State amounts to 9 lakh bales which is 6.6% of India's

total production and wool production is 3.6 million kgs. But the State has only 44 cotton mills and one million spindles in them in all whereas even neighbouring Tamilnadu State, there are 438 cotton mills and 4.4 million spindles, though the cotton production is less than that of Karnataka. There are 82,000 handlooms and 32,000 powerlooms in the State, which are experiencing the shortage of raw-material. There is an expanding demand for ready made dresses particularly hosiery in the foreign market. In order to promote the textile market, Government of Karnataka is envisaging a new policy to make the textile industry more self reliant. The following are the salient features of the policy:

- 1) The entire cotton produced in the State must be converted into yarn and cloth in the State itself;
- 2) To all textile units both in co-operative sector and private sector maximum facilities and encouragement is to be provided with a view to maximise the utilisation of available resources;
- 3) Take steps to make the handloom industry self reliant;
- 4) Providing looms to 32,000 loomless weavers, in a period of five years;
- 5) Helping the modernisation of the looms;
- 6) Providing good market facilities both to the handloom and powerloom clothes;
- 7) Utilising the liberalised policy of the Government of India in respect of powerlooms and increasing the area of operation by starting power looms and supplementing this work by starting a powerloom board or Corporation;
- 8) To start 25 regions having 1000 power looms each in five years with view to provide regular supply of facilities;
- 9) Establishing processing units with latest technology to improve the export of cloths;
- 10) Fostering innovations and research in the production of yarn by using non-conventional resources;
- 11) Establishing textile mill service centres to help research in improving technology and rendering training to textile workers;
- 12) Amending suitably the existing Cotton Control Act;
- 13) Arranging scientific grading of cotton;
- 14) Exempting Sales Tax on diesel used by generators engaged in the processes;
- 15) Assuring incessant supply of electricity to this industry by moving the K.E.B.; and
- 16) Establishing yarn banks to assure regular supply of yarn to the weavers.

The area under Mulberry is increasing at the rate of 70 percent per annum and the demand for silk cloth is also increasing both in the local and foreign market. In order to improve the silk industry the following programmes have been envisaged:

- 1) Encouraging the modernisation of silk reeling, dyeing, twisting, weaving and silk processing units;
- 2) Increasing the number of power silk looms by providing necessary facilities;
- 3) Adopting modern technology and computer designs in dyeing and printing silk cloth.

Woolen Weaving :The sheep wealth in the state is around 4.7 million and the annual wool production is 3.6 million kg and the woollen blankets

of the State have a wide market. In order to improve this industry the following programmes have been envisaged :

1) Training farmers to produce good quality wool; 2) Providing assistance for starting units to process raw wool in co-operative and private sectors; 3) Modernising grading, blending, carding and spinning processes of wool; and 4) Providing marketing assistance for the conventional woollen blanket and other products and extending advice to modernise production in view of change in the customers' need.

Ready made dresses and Hosiery

Ready-made dress manufactured in the State are having good marketing potential both in local and foreign markets. Hosiery industry has been started in the State recently, though it has been flourishing in Belguam (Shahpur) beginning with 1920 and there were 115 small units in 1954, producing banians, T-Shirts, Mufflers, Socks etc., Bellary and Bangalore districts are prominent in ready made dress making. In order to improve the latter industry, the following programmes are aimed at :

1) Encourage establishing Ready-made dress manufacturing units in Bangalore, Bellary and other places; 2) Establishing training centres to train ready-made dress makers and hosiery workers; 3) Establishing a Fashion Technology Centre in the State to enlighten the workers about the modern changes in fashion that are taking place in the national and world market; 4) Reducing sales tax on ready made garments to make them available on par with the rate prevailing in neighbouring States.

Add to part I, after 809 State undertakings:

There are 28 companies/Corporations including 5 subsidiaries in the State Public Sector under the Administrative Control of Commerce and Industries Department. The functions and activities of these Companies/Corporations are broadly classified as under :

Financial Promotions and Development: Karnataka State Industrial investment and Development Corporation limited. *Manufacturing and Engineering:* 1). N.G.E.F Limited Bangalore and Hubli, 2) Mysore Paper Mills Ltd. Bhadravathi, 3) Mysore Sugar Company Limited Mandya, 4) Mysore Lac & Paints Works Ltd. Mandya, 5) Mysore Chrome Tanning Company Ltd. Bangalore, 6) Karnataka Vidyuth Karkhane Ltd., 7) Karnataka Implements & Machineries Co. Ltd. Hassan & Bangalore, 8) Chamundi Machine Tools Ltd., 9) Mysore Cosmetics Limited, 10) Mysore Electrical Industries Ltd., 11) Karnataka Soaps & Detergents Ltd., 12) Mysore Lamp Works Ltd., 13) Karnataka Silk Industries Corporation Ltd., 14) Karnataka Telecom Limited (all in Bangalore).

Development : 1) Karnataka State Small Industries Development Corporation Limited, 2) Karnataka State Handicrafts Development Corporation Limited, 3) Karnataka State Handloom Development Corporation Limited, 4) Karnataka State Electronics Development Corporation Limited, 5) Karnataka Leather Industries Development Corporation Limited, 6) Karnataka State Textile Limited, and 7) Karnataka State Coir Development Corporation Limited.

Mines : 1) Hutti Gold mines Company Limited, 2) Mysore Minerals Limited.

Trading and Miscellaneous : 1) Mysore Sales International Limited, 2) Marketing Consultants & Agencies Ltd., 3) Karnataka Small Industries Marketing Corporation Limited.

Paid-up Capital : The paid up capital of the above 28 companies at the end of 1992-93 was Rs. 21,017.72 lakhs and has been contributed either wholly or jointly by the :1) State Government 2) Central and State Government 3) State Government Financial Institutions and State Government Companies.

Performance of Companies/Corporations

During the year 1991-92, the following Companies/Corporations have earned profits : 1) Karnataka State Industrial Investment & Development Corporation. 2) Hutti Gold Mines Company Ltd., 3) Mysore Sales International Ltd., 4) Mysore Minerals Limited, 5) Marketing Consultants & Agencies Ltd., 6) Mysore Acetate & Chemicals Company Ltd., 7) Karnataka Small Industries Marketing Corporation, 8) Mysore Lamp Works Limited, 9) Karnataka Telecom Ltd., 10) Karnataka Vidyuth Karkhane, 11) Mysore Paints & Varnish Ltd., 12) Mysore Paper Mills Ltd., 13) Karnataka State Small Industries Development Corporation Ltd., 14) Mysore Electrical Industries Ltd., 15) Karnataka State Handicrafts Development Corporation Ltd., and 16) Karnataka Handloom Development Corporation.

The profits earned by these Companies/Corporations are indicated in table No.5.8 The other Companies have incurred loss during the year 1991-92.

MINERAL OCCURRENCE

The investigations conducted in different parts of the State during recent years has revealed the following mineral occurrence and deposits: (i) The sulphide investigation has indicated promising gold deposit in parts of Deodurga Taluk and lithium deposit (spodumence) in Lingasugur Taluk of Raichur District. (ii) Occurrence of titaniferous magnetite as thin lenear patches from Kaiga to Mulemane in Uttara Kannada District and thin bands near Dibbadahalli, H.D. Kote Taluk, Mysore District. (iii) Occurrence of white quartzite, pink granite and black dyke in parts of Soundatti, Deodurga and Lingasugur Taluk of Belgaum and Raichur Districts. (iv) Occurrence of cement grade limestone near Horakeredevarpur, Holalkere Taluk, Chitradurga District. (v) Occurrence

of kyanite bearing quartz in Mallappanahally, Holenarasipur Taluk, Hassan District and steatite deposit in Bupura, Lingasugur Taluk, Raichur District.
(vi) Occurrence of corundum deposits around Parasurampura, Challakere Taluk, Chitradurga District.

District-wise Quarry Leases and Mining Leases in the States as in 1993

<i>Sl.No.</i>	<i>District</i>	<i>Quarry leases</i>	<i>Mining leases</i>
1.	Bangalore (Rural & Urban)	940	32
2.	Belgaum	270	72
3.	Bellary	168	135
4.	Bidar	17	9
5.	Bijapur	173	42
6.	Chickmagalur	77	11
7.	Chitradurga	75	97
8.	Kodagu	17	-
9.	Dakshina Kannada	618	44
10.	Dharwad	93	40
11.	Gulbarga	220	60
12.	Hassan	69	22
13.	Kolar	138	15
14.	Mandya	111	16
15.	Mysore	102	36
16.	Raichur	45	7
17.	Shimoga	234	24
18.	Tumkur	173	51
19.	Uttara Kannada	145	138
Total		3685	845

The State Government undertaking Mysore Minerals Ltd. has 41 Q.L. Blocks for ornamental stones of different colours.

The Government of India have revised the royalty rates for major minerals during February 1992. With the result, royalty collection from major minerals has substantially gone up during the year and upto end of December 1992, the collection were of the order of Rs. 1,776 lakhs and 715.38 lakhs from Minor and Major Minerals respectively. Yearwise details of the royalty collection from major and minor minerals from 1987-88 are furnished in Table

Table No. 5.7**Revenue from Minerals Royalty Realised**

(Rs.in Lakh)

Sl.No.	year	Major Mineral	Minor mineral	Total
1.	1987-88	529.19	429.56	958.75
2.	1988-89	667.08	580.37	1247.45
3.	1989-90	793.59	610.38	1403.97
4.	1990-91	841.02	729.99	1634.01
5.	1991-92	1212.37	936.68	2149.05
6.	1992-93 (up to December 92)	1776.00	715.38	2491.38 (Provisional)

Source : Directorate of Industries and Commerce

The above figures exclude the royalty collected by the forest Department on minor mineral leases in the forest area.

Table No: 5.8

Profit/Loss of the Public Sector Undertakings coming under the control of Commerce and Industries Department is indicated below

Sl. No.	Name of the Company/ Corporation	Paid up Capital (Rs. in Lakhs)	Profit/Loss Made during the the year Rs. in Lakhs (after tax, but before depn)			Remarks	
			1992-93	1989-90	1990-91		1991-92
1	2	3	4	5	6		
1.	Mysore Paper Mills Ltd.	6,453.00		(+)	2086.00		
2.	KSSIDC	4,174.12	(-)	7.21	(+)	251.00 (+)	275.00
3.	N.G.E.F	1,000.00	(+)	415.25	(+)	273.00 (-)	696.44
4.	Hutti Gold Mines Company Ltd.	266.20	(+)	244.27	(+)	166.00 (+)	1038.21
5.	M.S.I.L.	60.00	(+)	20.65	(+)	171.00 (+)	74.94
6.	Mysore Minerals Ltd.	52.51	(+)	53.55	(+)	285.00 (+)	67.06
7.	Marketing Consultants & Agencies	5.00	(+)	7.74	(+)	13.71 (+)	3.56
8.	KAVIKA	385.96	(+)	59.24	(+)	84.00 (+)	159.63
9.	M.A.C.C. Ltd.	647.00	(+)	149.71	(+)	462.00 (+)	2.85
10.	KSMC Ltd.	141.00	(+)	3.40	(+)	23.56 (+)	5.14
11.	Mysore Lamp Works Ltd.	136.60	(+)	42.29	(+)	267.00 (+)	123.30
12.	KSSIDC	1510.86	(-)	9.35	(-)	23.56 (+)	47.29

1	2	3	4	5	6	
13.	Mysore Cosmetics Ltd.	15.00	(-)	6.53	(-) 10.85(P)	(-) 10.32
14.	KIMCO	485.34	(-)	155.55	(-) 287.00	(-) 324.24
15.	Chamundi Machine Tools Ltd.	63.50	(-)	28.11	(-) 23.00	(-) 42.96
16.	KS & DL	1763.12	(-)	1230.49	(-) 1394.34	(-) 1026.82
17.	KHDC	718.00	(-)	64.45	(-) 10.75	(+) 46.01
18.	Mysore Sugar Company Ltd.	273.43	(+)	465.00	(+) 329.73	(-) 17.12
19.	KEONICS	655.00	(+)	84.21	(-) 198.00	(-) 74.00
20.	KSIDC	233.50	(-)	6.45	(-) 10.75	(+) 3.65
21.	Mysore Electrical Industries Ltd.	141.05	(+)	44.87	(-) 85.19	(+) 39.29
22.	Mysore Chrome Tanning Company Ltd.	75.74	(-)	74.27	(-) 54.22	(-) 56.41
23.	LIDKAR	138.67	(-)	42.90	(-) 59.00	(-) 58.66(P)
24.	Mysore Lac & Paints Ltd.	71.65	(+)	34.47	(-) 10.00	(+) 21.72
25.	Karnataka Telecom Ltd.	100.00	(+)	126.34	(+) 100.07	(+) 125.18
26.	KSCDC Ltd.	92.00	(-)	4.79	(-) 5.00	(-) 1.82
27.	Karnataka Textile Pvt. Ltd.,(Mahadeva)	50.00	(-)	149.94	(-) 134.86	(-) 186.41
28.	K.S.I.C	1309.47	(-)	498.00	(-) 355.37	(-) 43.03

Source: Director of Industries commerce.

Table.5.9

Number of large & medium scale industries in the State of Karnataka as on 31.3.1993

Sl. No.	Name of the District	No. of units	Investment Rs.in lakhs	Emploment in Nos
1		2	3	4
1.	Bangalore (U)	323	1,10,156.13	1,22,404
2.	Bangalore (R)		0	
3.	Belgaum	30	21,885.32	16,960
4.	Bellary	21	19,333.58	8,421
5.	Bidar	16	4,848.25	2,611
6.	Bijapur	9	4,386.09	4,565
7.	Chikmagalur	5	67,743.24	2,638
8.	Chitradurga	26	2,346.49	3,211
9.	Dakshina Kannada	34	23,893.69	7,106
10.	Dharwad	61	12,637.81	9,728
11.	Gulbarga	14	1,93,502.91	10,508
12.	Hassan	5	1,497.61	1,027

1	2	3	4
13. Kolar	13	14,073.82	27,630
14. Kodagu	2	174.01	375
15. Mysore	88	34,442.08	20,020
16. Raichur	22	28,162.86	9,576
17. Mandya	9	6,570.45	5,015
18. Shimoga	15	39,330.63	14,864
19. Tumkur	19	10,612.07	5,199
20. Uttara kannada	11	11,564.58	5,689
Total	723	6,07,16,161.99	2,77,547

Source: Directorate of Industries and Commerce.

Add to Part II, page 844

Technical Consultancy Service of Karnataka (TECSOK)

This agency provides project report, marketing survey and other required assistance to the industrial entrepreneurs. TECSOK participates in many symposia, conference etc. on industries representing the State Government. To assist the women entrepreneurs, a Women's Development Centre has been established. By 1991-92, 217 persons have been trained. Upto 1992-93 the agency has prepared 138 project reports for appraisal for the entrepreneurs involving an investment of Rs.1,800 lakhs and an employment potential of 2,300 persons. There are six district training officers assisting in the District Industries Centres.

Vishwa Programme

This programme named after Sir M.Visveswaraya is aimed to provide productive employment to the rural populace continuously and was launched on 2nd October, 1991. The major thrust is to identify the unemployed and hereditary craftsmen in villages and to provide them employment. By supplying raw materials, providing marketing assistance, the programme is expected to create uninterrupted productive employment and thus strengthen the fiscal base in the rural sector and discourage immigration to urban areas.

As on 31.12.92, the progress achieved by the programme is as hereunder. No. of units - 5403; beneficiaries 60,705; villages covered 1,136; persons under training - 30,848; persons completed training 10,432; value of production Rs.1,965.575 lakhs; sales Rs.1256.585 lakhs. Match boxes, note books, footwear, detergent cake, steel furniture, agarbathi, chalk crayons, phenyle, coirmats, handicrafts items like sandal wood works, Bidriware, etc., are sold under the programme. Exports worth of Rs.7.85 lakhs have been made.

District Industries Centre

District Industrial Centres were established in May 1978 and as in 1992, there were 21 Vocational Training Centres. Besides there is one Rural Training Centre at Hunsur. Training is also imparted in Jayachamarajendra Technical

Institute and Destitute relief Centre by the Department of Industries. The major thrust of this scheme is to provide help at the Pre-investment stage to the rural industries that are in organised and centralised industrial sectors. The Centre has given consent for modernisation of Craftsmen Training Centres as a feed-back programme and to train rural youth for the Central Government's self-employment scheme. An amount of Rs.102.68 lakhs has been provided in the Annual Plan (1991-92).

Artisan Training Institutes

At present there are 21 Artisan Training Institutes with eight branches. In addition the Rural Industrial Development Centre at Hunsur, Chamarajendra Technical Institute at Mysore and the Industrial Training Centres in Bangalore are run by the Department. These institutes enable the craftsmen to adopt modern methods of production and become self employed in rural areas.

The Proposal of having District Industries Training Centres has been approved by Government of India as part of TRYSEM infrastructure. This has been taken up in two phases. In the first phase, the following 9 districts have been selected. 1. Bangalore, 2. Belgaum, 3. Bellary, 4. Chitradurga, 5. Dharwad, 6. Mysore (Hunsur), 7. Mangalore (Moodbidri), 8. Tumkur and 9. Hassan. In the Second phase 7 more DITCs have been sanctioned by Government in the following districts: 1. Bijapur, 2. Bidar, 3. Chikmagalur, 4. Gulbarga, 5. Mandya, 6. Kolar, and 7. Raichur.

Add to part I, page 897:

Handlooms

As on 1990, there were 83,395 handlooms in the State, of which, 10,126 under co-operative fold, 14,395 under corporation fold and 58,874 under private/independent/master weavers. The VII Plan outlay was Rs.5,513 lakhs by way of assistance to weavers both in corporate sector and cooperative sector through Karnataka Handloom Development Co-operative Societies. An outlay of Rs.1,387.50 lakhs has been proposed for the benefit of weavers in VIII Plan. The following are the details of the scheme envisaged in VIII Plan: 1. Construction of living-cum-work-sheds adjoining the houses of the weavers; A grant of Rs.6,000 and Rs.3,000 to living-cum-worksheds and worksheds respectively has been provided; 2. A thrift scheme as a social security scheme with 6% contribution of the weavers and matching contribution of the Government is contemplated; 3. Market development assistance has been introduced in lieu of rebate scheme with an outlay of Rs.2134 lakhs in VIII Plan; 4. Special rebate of 20% for National Expos is being envisaged with an outlay of Rs.500 lakhs in VIII Plan; 5. Modernisation of looms to upgrade the skills of weavers and improving the economic conditions by enhancing the productivity has been planned. The funding pattern is 2/3 for loan and 1/3 grant with 50% matching contribution from Government of India. An outlay of Rs.130 lakhs has been allocated in the VIII plan; 6. Export oriented Silk Project with a target coverage

of 1,000 looms is in progress; 7. Advanced training institutes for handloom weavers at Hubli and Banahatti to train nearly 20,000 weavers is also proposed; 8. Loom coverage for unemployed women to cover 300 women weavers at a total cost of Rs.25 lakhs is contemplated; 9. Karnataka Handloom Development Corporation has been nominated as nodal agency for implementing Janatha Woollen Scheme in the State. The Corporation is taking over the production centres of the erstwhile Intensive Woollen Handloom Development Project run by the Woollen Apex Society. The woollen weavers who intend to resort to modernisation and undergo training are provided these facilities and also supply of input and marketing assistance; it is proposed to create infra-structure by opening production sub-centres with an outlay of Rs.50 lakhs; 10. An export-oriented cotton project at Bhagyanagar, Raichur district to be established with an outlay of Rs.100 lakhs; 11. A detailed survey of handlooms is proposed to be conducted and completed during the VIII Plan period; 12. Training of handloom weavers at Indian Institute of Handloom Technology, Salem by paying stipend has been planned; 13. Interest-free subsidy to Handloom weavers co-operative societies will be extended; 14. Handloom Co-operative Societies are provided assistance under the NCDC scheme by way of grant, loan and investment management training to the secretaries, amalgamation of apex societies, establishment of an Enforcement Cell and introduction of Group Life Insurance Scheme are some of the measures envisaged in the VIII plan.

A proposal to set up training institute for weavers in the State on the lines of the Indian Institute of Handloom Technology, Salem is also on the anvil.

In order to encourage the power loom weavers, share capital assistance was made available and the same facility is being extended in the VIII Plan. Starting of powerloom complexes at Chikodi and Doddaballapur has been proposed.

In 1987, a study was made by the TECSOK (Technical Consultancy Services a Organisations of Karnataka) for establishing powerloom complexes in the State with three pre-loom processing units, 111 weaving units with 600 looms, and one post-loom processing unit at a cost of Rs.640 lakhs.

Directorate of Handlooms and Textiles

This directorate was created as per the suggestions of the Government of India in 1992, to implement various handloom and powerloom developmental schemes with an objective of providing continuous employment to the weavers, upgrading of their skills, to improve their socio-economic conditions through K.H.D.C and Co-operative Societies. During 1992-93, the Co-operative Apex Institutions which were not performing well were amalgamated into Karnataka Co-operative Handloom Weavers Federation Limited, with an intention to cover larger number of weavers under co-operative field. Some of the new schemes of this Directorate as envisaged in Plan for 1992-93 are development of handlooms in village an integrated approach, setting up of

Handloom Technology Institute, Price Fluctuation Fund, to improve the Export Garment Project etc. The Directorate is also contemplating to cover the weavers under unorganised sector, and to lay emphasis in revitalisation of Primary Handloom Weavers Co-operative Societies. The major welfare scheme implemented by the Directorate is Thrift Fund Scheme, Group Insurance Scheme, House-cum-workshed Scheme, Nekarara Ashajyothi Scheme, Maternity Benefit Scheme etc.(See textile policy 1993 in page.198).

The Indo-Dutch project Management Society (IDMPS)

This society on behalf of the Government of Karnataka has prepared the proposals for a Rural Small and Micro Enterprises Development programme and has submitted the same to the Government of Karnataka for consideration and for onward transmission to the Government of Netherlands. During 1980, a project entitled "Karnataka Industrial sheds project" was under taken as a part of Indo-Dutch Co-operation activities with the objective of improving the socio-economic situation of the beneficiaries, generating rural employment and diversifying product range and improving their quality. In all, five sectors viz. handlooms, handicrafts, leather, sericulture and small scale Industries were selected. As in 1986 and 1988, there was significant improvement in certain areas, but no improvement in other areas. The programmes under RSMED are to be taken up in Dharwad, Gulbarga, Mysore and Bijapur districts, and the duration of the project is five years from 1990, and total cost is Rs.411.5 lakhs.

SERICULTURE

Karnataka accounts for 60% of the country's total raw silk production. As in 1990, there were about 0.146 million hectares of land constituting one per cent of total cultivable area under mulberry in the State. About 2,94,800 families in about 16,593 villages are engaged in mulberry cultivation and silk worm rearing. The production of cocoon and silk which was 11,800 and 727 tonnes respectively in First Five Year Plan has increased to 57,721 and 6,076 tonnes respectively by 1989. The State is providing the required infrastructural support to sericulturists by establishing 95 silk farms, 77 government grainages, 150 Technical Service Centres, 20 Model Chawki Rearing Centres, 1,700 Chawki Rearing Centres, four training schools, 51 Cocoon Markets, one Mini Silk Exchange with three branches, five filatures, one twisting and weaving unit, nine training-cum-production reeling centres and 21 Mini-filatures. The silk cocoons produced in the State are processed in about 22,329 reeling basins and 26,020 charakas by 11,560 private reelers located in rural areas. Besides, there are about 1,25,000 twisting spindles, 25,000 silk power looms, and 22,722 silk handlooms operated by private enterprises.

The State has achieved a production of 57,271 tonnes of cocoons and 6076 tonnes of raw silk by 1990, with the development plan carried out during VI and VII plan period by implementing the World Bank assisted "Karnataka Sericulture Project". The Sericulture activity which was only in five southern

districts, has now been extended to non-traditional areas covering other districts also. The other achievements by implementing "Karnataka Sericulture Project" are (1) supply of good quality silk worm eggs from Model Grainages, (2) supply of young silk worm rearing in Chawki Rearing Centres, (3) Advice through extension staff on technical service centres.

During the implementation of the "Karnataka Sericulture Project", it was found to take the industry for further improved position and the VIII Plan laid emphasis on the following: (1) To increase the productivity per unit area from 625 kg to 750 kg per hectare in irrigated areas and 200 kg to 230 kg per hectare in rainfed areas. (2) To increase the raw silk production by about 3434 tonnes (total production of about 9510 tonnes per year) as detailed in the table.

Table No.5.10

(Figures in tonnes)

<i>Year</i>	<i>Cocoon production</i>	<i>Silk production</i>
1990-91	66327	6300
1991-92	65570	6890
1992-93	70957	7685
1993-94	76988	8575
1994-95	82897	9510

In order to achieve these targets, strengthening the seed production organisations like P2 farms, P2 and P1 grainages, Chawki Rearing Centres in seed areas, advisory services, and planting mulberry in an additional area of 22,674 hectares has been planned. (3) To strengthen the processing facilities by credit support to entrepreneurs for establishing charaka and cottage basins for reeling and for establishing twisting and weaving units. (4) To generate incremental employment to about 2.72 lakhs work years. (5) The 13 cold storage plants installed under Karnataka Sericulture Project Phase I would support the production programme for better quality silk worm layings and for processing the silk worm eggs. It has also been programmed to produce 650 metric tonnes of bivoltine silk. All these schemes/programmes are to be implemented during VIII Plan under Karnataka Sericulture Project and through the Second World Bank Project "National Sericulture Project - Karnataka Phase II".

Mulberry was cultivated in 1,49,800 ha in 1990-91 as against 1,32,420 ha in 1985-86 and 1,21,635 ha in 1982-83. Cocoon production was 37,751 tonnes in 1982-83 and 42,673 tonnes in 1985-86. In 1990-91, it was 57,867 tonnes. Silk production for the year 1982-83 was 3279 tonnes and 4300 tonnes in 1985-86. It was 6214 tonnes in 1990-91.

Mysore district leads in sericulture with 57,333 ha under mulberry in 1991-92, but producing only 11,063 mts of cocoons. whereas Kolar district produces 14,767 mts of cocoons in a total area of 24,749 ha and Bangalore Rural district 11,331 mts of cocoons in an area of 20,092 ha under mulberry (see Table No.5.9A)

Table No.5.9A

Table showing Statistics on Sericulture (District-wise) as in 1991-92.

Sl. No.	Name of District	Area under Mulberry (Hects)	No. of Sericultural taluks	No. of Sericultural villages	No. of Sericultural families	No. of grain-ages	No. of Govt. Silk Farms	Chowki rearing centres	No. of Cocoon Markets	No. of Reelers	No. of Units	No. of Charakas Basins	Production of cocoons Mts.	Value of cocoons transacted (Rs.Lakhs)	Production of Raw silk (Mts)	Value of Silk (Rs. lakhs)	
1.	Bangalore (R)	20092	8	2631	59578	24	12	53	4	4384	7297	7753	11659	11331.57	2115.16	1193	962
2.	Bangalore (U)	2745	3	663	6195	4	1	265	7	254	254	761	12	1154.94	901.72	121	13903
3.	Belgaum	1372	10	409	3697	1	8	24	3	7	7	2	30	244.69	43.47	25	0
4.	Bellary	1023	8	781	1681	1	5	56	3	10	29	24	32	267.77	24.14	28	0
5.	Bidar	315	5	172	728	1	1	24	2	32	32	33	59	47.67	15.82	5	0
6.	Bijapur	1614	11	362	3110	1	3	80	2	46	46	40	154	212.99	39.41	22	30
7.	Chickmagalur	734	7	385	1930	0	2	12	1	18	18	4	100	180.70	9.28	18	-
8.	Chitradurga	3187	9	810	6032	1	4	83	2	76	33	57	37	1193.09	16.18	126	-
9.	Dakshina Kannada	725	8	381	3213	0	2	13	1	8	9	18	12	161.38	19.95	16	-
10.	Dharwad	1458	15	523	2137	2	5	78	4	53	53	34	224	251.32	45.03	27	-
11.	Gulbarga	1484	10	382	2622	0	1	45	1	44	49	45	92	246.62	133.90	26	-
12.	Hassan	4303	8	1282	15358	1	7	47	2	28	28	36	69	1009.13	321.09	107	-
13.	Kodagu	624	3	167	1650	19	1	4	0	-	-	-	-	64.05	10.29	6	-
14.	Kolar	26749	11	3181	59300	8	8	251	9	3672	3982	1765	3965	14767.02	12271.14	1555	1945
15.	Mandya	14738	7	1325	58108	8	3	192	4	122	160	285	101	5405.90	213.00	570	-
16.	Mysore	57333	11	3167	86717	14	14	344	8	2456	2458	8598	8484	11063.00	8645.55	1165	1445

Sl. No.	Name of District	Area under Mulberry (Hects)	No. of Sericultur taluks	No. of Sericultur villages	No. of Sericultur families	No. of grain-ages	No. of Govt. Silk Farms	Chowki rearing centres	No. of Cocoon Markets	No. of Reelers	No. of Units	No. of Charakas	No. of Basins	Production of cocoons Mts.	Value of cocoons transacted (Rs.Lakhs)	Production of Raw silk (Mts)	Value of Silk (Rs. lakhs)
17.	Raichur	669	9	334	1339	1	4	66	6	-	-	-	-	144.22	1.04	15	-
18.	Shimoga	855	9	564	1954	1	1	49	1	100	27	25	75	116.22	25.53	12	-
19.	Tumkur	12347	10	2118	15584	12	13	129	6	241	274	528	69	4028.85	1399.73	425	-
20.	Uttara Kannada	708	11	686	1417	2	0	26	1	9	9	12	15	73.43	90.62	8	-
Total		153085	173	20323	332350	85	95	1841	61	11560	14765	26620	25389	51965.56	26342.15	5470	18285

Source: Sericulture Department.

Bangalore Urban District: Spun Silk Yarn produced in kgs: 1,09,104; Silk Yarn produced in kgs: 33,059

Apiculture

It is estimated that Karnataka could produce around 20 lakhs kgs. of honey if available resources are fully tapped. It provides part-time job to lakhs of agriculturist families. Bee-keeping development programme in Karnataka is in the hands of several agencies viz. Department of Industries and Commerce, Khadi and Village Industries Commission, Khadi and Village Industries Board and the Bee-Keeper's Co-operative Societies. Kodagu, Dakshina Kannada and Uttara Kannada are the main centres of honey production.

The Bee-keeping industry under the Department of Industries and Commerce has been divided into two zones viz.,- Karnataka Eastern Zone and Karnataka Western Zone with Headquarters at Bangalore and Madikeri respectively. Steps are being taken to control the Taisac Brood disease.

Table No. 5.11

Districtwise figures of Area under Mulberry, Chawki Rearing Centres, Cocoon production and silk production in the State in 1991

<i>Sl. No.</i>	<i>Name of the district</i>	<i>Area under mulberry 00 hectares</i>	<i>Chawki rearing centres Numbers</i>	<i>Cocoon Production tonnes</i>
1.	Bangalore	28	41	1156
2.	Bangalore (Rural)	201	208	11332
3.	Belgaum	14	32	245
4.	Bellary	10	30	268
5.	Bidar	3	21	48
6.	Bijapur	16	57	213
7.	Chickmagalur	7	22	180
8.	Chitradurga	32	73	1193
9.	Dakshina Kannada	7	12	161
10.	Dharwad	15	77	251
11.	Gulbarga	15	46	247
12.	Hassan	43	51	1009
13.	Kodagu	6	5	64
14.	Kolar	268	286	14767
15.	Mandya	147	190	5406
16.	Mysore	573	250	11063
17.	Raichur	7	63	144
18.	Shimoga	9	48	116
19.	Tumkur	123	87	4209
20.	Uttara Kannada	7	31	74
Total		1531	1630	51966

List of Medium & Large Scale Industries in Karnataka together with date of establishment as in 1990:

In Bangalore District

Metallurgical Industries. 1) Andhra Steel Corporation, 1972; 2) Bangalore Wire and Rod Mill, 1976; 3) Best & Crompton Engg. Ltd., 1968; 4) Bhoruka Steel Ltd. (N.A.) 5) Brindavan Alloys Ltd. 1973; 6) G.R. Steels and Alloys Pvt. Ltd. 1970; 7) Gemini Steels and Tubes Ltd 1981; 8) Jindal Aluminium Ltd. 1976; 9) K.M.A. Ltd. 1972; 10) Kap Steel Ltd. 1974; 11) Mittal Steel Ltd. 1975; 12) Panyam Cements and Mineral Industries Ltd. (Wire Dn) 1977; 13) Rukmini Steel Industries Ltd 1965; 14) Shetron Metals Ltd., 1984; 15) Shivmoni Steel Tubes Ltd. 1971 16) The India Tin Industries (P) Ltd, 1946; 17) Weldast Steels Ltd., 1972.

Electrical Equipments: 18) Triveni Engineering Works Ltd 1973; 19) AMCO Batteries Ltd. 1955; 20) ASEA Ltd., 1950; 21) Bengal Lamps Ltd., 1971; 22) Bharath Electronics Ltd 1954; 23) Bharath Heavy Electricals (Control Equipment Division) 1948; 24) Deepak Insulated Cable Corporation Ltd. 1964; 25) Electro Carbenium (Pvt) Ltd., 1975; 26) Electronic Research (Pvt) Ltd 1968-27) Ferrite India Ltd - 1972; 28) Guest Keen Williams Ltd -1959; 29) H.G. Resistors (Pvt) Ltd 1982; 30) Hindustan Machine Tools (Electronic Watch Project) - 1981; 31) Karnataka Vidyuth Karkhane Ltd 1933; 32) Kirloskar Electric Company Ltd 1946;33). Kirloskar Systems Ltd.1962; 34) Lakshmana Isola Ltd 1976; 35) Metal Lamp Caps (India) Ltd. 1964; 36) Mini Circuite Ltd - (N.A.); 37) Micropack Ltd. 1984; 38) Mohan Aluminium Ltd 1966; 39) N.G.E.F. Ltd., 1965; 40) N.G.E.F. (AEF) Engineering Co., Ltd., 1970; 41) Rao Insulating Co. Pvt. Ltd. 1962; 42) S&S Bushings Ltd. 1977; 43) Senapathy Whitelay Ltd. 1960; 44) Stumpp Schule and Somappa Ltd. (Electronic Dvn) 1960; 45) The Mysore Electrical Industries Ltd. 1945; 46) The Mysore Lamp Works Ltd. 1936; 47) Trident Electronics Pvt Ltd. 1981; 48) UB-MEC Batteries Ltd.1946; 49) WS Insulators of India 1976;

Telecommunication: 50) British Physical Laboratories India Ltd 1963; 51) Indian Telephone Industries Ltd 1946; 52) Raghunandan Electronics Ltd 1984;

Transportation: 53) Bharath Earth Movers Ltd 1964; 54) Escorts Ltd 1977; 55) Hindustan Aeronautics Ltd 1940; 56) International Coach Builders Pvt Ltd. 1982; 57) KAR Mobiles Ltd 1936; 58) Motor Industries Co. Ltd 1951; 59) San Engineering & Locomotive Co., Ltd 1972; 60) Sipani Automobiles Ltd.1974.

Industrial Machinery: 61) G.R. Engineering Works Pvt Ltd. 1973; 62) Grindwell Norton Ltd 1972; 63) Hind High Vaccum Co. Pvt. Ltd. 1964; 64) Ingersoll-Rand India Ltd. 1977; 65) John Fowler (India) Ltd 1953; 66) Madura Coats Pvt Ltd 1977; 67) Nav Bharath Flange and Allied Industries Pvt Ltd 1983; 68) Prashanth Cylinders Pvt Ltd 1981; 69) Sikka & Sikka Engg. Pvt Ltd. 1971; 70) S.S.S. Engineering Co., Ltd 1981; 71) Stump-Schule Somappa Ltd. (Springs Division) 1960; 72) Usha Martin Industries Ltd 1914.

Machine Tools: 73) Alfred Herbaert (India) Ltd (N.A.); 74) Bharath Fritz Werner Pvt Ltd. 1961; 75) Dynamic Hydraulics Ltd. 1973; 76) Hindustan Machine Tools Ltd (Horological Machinery Dn) 1974; 77) Hindustan Machine Tools Ltd. (Machine Tools and die-casting Dn) 1953; 78) Hindustan Machine Tools Ltd. (Specialised Watch-case Dn) 1983; 79) Hindustan Machines Tools Ltd. (Watch Factory I & II) 1961; 80) Rewdale Precision Tools Pvt. Ltd. 1982; 81) Wipro Ltd. (Fluid Power Division) 1976; 82) Yuken India Ltd. 1976.

Agricultural Machinery: 83) Karnataka Implements and Machineries Co., Ltd., 1976; 84) Vicon Ltd. 1968; 85) V.S.T. Tillers Tractors Ltd 1967.

Earth Moving Machinery: 86) Larsen Tourbo Ltd. (Bangalore Works) 1975.

Misc. Mechanical & Engineering Works: 87) F.Fibre Bangalore (P) Ltd 1964; 88) Jairamdas Udyog Ltd 1961; 89) Pramcela Plastics Pvt. Ltd., 1984; 90) Suman Sugiyama Plastics Electronics Pvt. Ltd., 1972; 91) T.T. (Pvt.) 1955; 92) Widia (India) Ltd.(N.A.)

Industrial Instruments: 93) Fouress Engineering (India) Ltd. 1974; 94) International Instruments Ltd 1958; Karnataka Jewels Pvt Ltd. 1974

Photographic Raw Film and Paper: 96) Monotype India Ltd. 1976.

Chemicals other than Fertilisers: 97) Agromore Ltd. 1960; 98) Asiatic Industrial Gases Ltd 1982; 99) Karnataka Oxygen Ltd 1974; 100) S. Victor Multicore Solder (P) Ltd., (N.A) 101) The Swadeshi Chemicals Pvt. Ltd. 1973; 102) United Oxygen Co. P. Ltd. 1974; 103) Vioryl (india) Pvt. Ltd. 1983.

Drugs and Pharmaceuticals: 104) Astra IDL Ltd. 1981; 105) Eskayef Ltd., 1971; 106) Sk. JL Morrison & Jones (India) Ltd. 1968; 107) Magnesium Products (Pvt) Ltd. 1978.

Textiles: 108) Binny Ltd (Bangalore Woollen and Cotton and Silk Mills 1884; 109) Chandra Spinning and Weaving Mills Pvt. Ltd. 1954; 110) Chamundi Textiles (Silk Mills) Ltd. 1976; 111) Doddabalapur Spinning Mills Ltd. 1976; 112) Gokaldas Garments 1979; 113) Gopalakrishna Textile Mills Private Ltd. 1958; 114) Karnataka Silk Industries Corporation Ltd (taken over in 1981); 115) Minerva Mills (at present unit of National Textiles Corporation) 1925; 116) Mysore Spinning and Manufacturing Mills (at present unit of NTC) 1884; 117) Panchavarna Textile Processing (P) Ltd. NA; 118) Ramachandra Rexine (Pvt.) Ltd., 1983; 119) Ramkumar Mills (pvt) Ltd.1947;120) Sree Srinivasa Textile Processing Ltd 1970; 121) Sree Valliappa Textiles (Unit I & II) 1963; 122) Sri Krishna Spinning and Weaving Mills Pvt. Ltd. 1960; 123) Sri Suryodaya Industries Ltd. 1951; 124) Subhadra Textile Pvt. Ltd.:(NA) 125) T.R. Mills (P) Ltd. 1954.

Fermentation: 126) Amruth Distilleries 1953; 127) Gemini Distilleries Pvt. Ltd. 1970; 128) Khoday Brewing & Distilling Industries Ltd. (Brewery Dn.) 1972; 129) Mysore Breweries Ltd 1970; 130) United Breweries Ltd. 1970.

Food Processing Industries: 131) Bangalore Soft drinks Pvt. Ltd. 1960; 132) Chamundi Roller Flour Mills Ltd. 1973; 133) Elgin Electric Flour Mills 1930; 134) Gayathri Roller Flour Mills 1971; 135) Joy Ice Creams (Bangalore) Pvt. Ltd. 1966; 136) Karnataka State Agro Corn Product Ltd. 1973; 137) Kissan Products Ltd. 1948; 138) Krishna Flour Mills (Bangalore) Ltd. 1977; 139) Kwaliti Biscuits (P) Ltd. 1963; 140) Maanay Roller Flour Mills Ltd. 1916; 141) Mangharam & Sons 1969; 142) Modern Food Industries Ltd. 1970; 143) Mysore Foods (Pvt.) Ltd. 1965; 144) Seethalakshmi Hall Flour Mills Ltd. 1970; 145) Sri Balakrishna Flour Mills 1935; 146) Sri Venugopal Floor Mills 1928; 147) The National Products 1942; 148) T.T.K. Pharma Ltd. (Food Division) 1985; 149) Agro Extracts Ltd. 1974;

Soaps, Cosmetics: 150) Karnataka Soaps and Detergents Ltd. 1918; 151) Karnataka Consumer Products Ltd. 1962.

Leather: 152) The Mysore Chrome Tanning Co. Ltd. 1940

Ceramics: 153) Bharath Heavy Electricals (Electro Procelains Division) 1932 (merged with B.H.E.L. in 1976); 154) K.H.B. Brick Plant 1971; 155) The Mysore Stoneware Pipes and Potteries Ltd. 1937; 156) The Standard Brick and Tile Co. (Yelahanka) Pvt. Ltd. 1970.

Timber: 157) Mafathlal Plywood Industries Ltd., 1943.

Miscellaneous: 158) Chamundi Granite (Pvt.) Ltd.(NA) 159) Graphite India Ltd. 1973; 160) I.T.C. Ltd. 1912; 161) Ittina Printers Pvt. Ltd. 1983; 162) The Bangalore Printing and Publishing Co. Ltd. (Bangalore Press) 1916; 163) The Mysore Press Pvt. Ltd. 1947.

List of Medium and Large Scale Industries in the State Outside Bangalore District

Metallurgical Industries: 1) Ashok Iron Works Pvt. Ltd. Belgaum, 1973; 2) Indian Aluminium Company Ltd. Belgaum, 1969; 3) Jayhind Engineering, Belgaum 1976; 4) Navakarnataka Steels Ltd. Bellary, 1972; 5) Saroj Alloys and Steels Ltd. Bellary 1971; 6) The Sandur Manganese and Iron Ores Ltd. (Metal Ferro Alloys), Bellary, 1968; 7) Bidar Special Alloy Steel Pvt. Ltd. Bidar, 1983; 8) Impact Tubes Ltd. Bidar, 1982; 9) Vignyan Industries Ltd. Tarikere, 1963; 10) Canara Steels Ltd. Mangalore, 1973; 11) Canara Wire and Wire Products Ltd. Mangalore, 1963; 12) Canara Works Ltd. Mangalore, 1943; 13) Lamina Foundaries Ltd., Karkala, 1981; 14) Karnataka Aluminium Ltd. Mysore, 1979; 15) Rane (Madras) Ltd. Mysore, 1984; 16) Shimoga Steels Ltd. Mysore 1973; 17) Vishnu Forge (Mysore) Ltd., Mysore, 1977; 18) Pearlite Liners Pvt. Ltd. Shimoga, 1974; 19) Visweswaraya Iron & Steel Ltd. Bhadravathi,(1923); 20) Durgi Metalwaras Pvt. Ltd. Sirsi, 1984; 21) The Dandeli Ferro Alloys Pvt. Ltd. Dandeli, 1955.

Electrical: 22) Kirloskar Electric Co. Ltd. Hubli, N.A. 23) ACC Components and Electronics Pvt. Ltd. Mysore, 1983; 24) Advance Components

and Instruments Pvt. Ltd. Mysore, 1975; 25) Bells Controls Ltd., Mysore, 1983; 26) Geep Industrial Syndicates Ltd. Mysore - 1983; 27) Jay Electric Wire Corporation Ltd. Mysore (N.A.) 28) Larsen and Toubro Ltd. Mysore, 1986; 29) DRR CEE Electronics Ltd. Mysore, 1977; 30) Vijay Wires and Filaments (P) Ltd., Mysore, 1978; 31) Wipro Information Technology Ltd., Mysore 1982.

Transportation: 32) Automative Axles Ltd. Mysore 1982; 33) Kar Mobiles Ltd. Tumkur, 1984.

Industrial Machinery: 34) BJP Structural (India) Pvt. Ltd., Belgaum, 1982; 35) Mullur Cylinders Pvt. Ltd. Belgaum, 1983; 36) Tungabhadra Steel Products Ltd. Bellary Dt. 1960; 37) Mazagon Dock Ltd. Mangalore, 1983; 38) Deepak Insulated Cable Corporation Ltd. Mysore, 1981; 39) Machinery Manufacturing Corporation (Machinery Division), Mysore, 1981; 40) The Triveni Engineering Works Ltd., Mysore, 1976.

Machine Tools: 41) Arun Enginnering Works, Belgaum, 1957; 42) BEMCO Hydraulics Ltd., Belgaum, 1957; 43) Cosmos Watch Industry Pvt. Ltd. Bidar, 1986; 44) Elmecca Works Dharwad, 1969; 45) Precision Tooling Systems Ltd., Dharwad, 1969; 46) Walchandnagar Industries Ltd. TIWAC Division, Dharwad, 1961; 47) Chamundi Machine Tools Pvt. Mysore, 1975; 48) HMT Watch Factory Ltd IV, Tumkur 1977.

Agricultural Machinery: 49) Palson Structurals India Pvt. Ltd. Belgaum 1974; 50) Karnataka Implements and Machinerics Co., Ltd., Hassan, 1976; 51) Bharath Earth Movers Ltd., K.G.F., 1964; 52) Panchamal Industrial Corporation, Mangalore, 1964; 52) Karnataka Poly Products Ltd. Hubli, 1983; 54) Diamond Dyed Manufacturing Corporation Ltd. Mysore, 1976; 55) Wiltech India Ltd. Mysore, 1979; 56) Gem Properties Pvt. Ltd., Tumkur, 1985.

Industrial Instruments: 57) Triton Valves Ltd. Mysore, 1977; 58) Indo-Swiss Anti Shock Ltd. Tumkur, 1982.

Fertilizers: 59) Granular Fertilizer Agricultural Products Co-op. Marketing Society, Nipani, 1972; 60) Mangalore Chemical and Fertilizers Ltd. Mangalore, 1966.

Chemicals: 61) Panyam Cements and Mineral Industries Ltd. Hagari, Bellary Dt. 1974; 62) Karnataka Explosives Ltd., Karkala, 1980; 63) Reghoji Industrial Gases, Gulbarga, 1983; 64) Vishal Private Ltd., Shahabad, 1983; 65) Gammon Fertilisers and Chemicals, Belagola (Originally State Undertaking, 1937) 1975; 66) The Mysore Acetate and Chemicals Co. Ltd., Mandya, 1968; 67) KAP Chem. Ltd., Mysore 1983; 68) Mysore Oxygen Co., Ltd., Mysore 1981; 69) Southren Organo Chemicals Ltd., Nanjangud, 1979; 70) Mysore Petro-Chemicals Ltd., Hegasarahalli, Raichur District, 1969; 71) Vijaya Oxygen Co., Ltd., Hospet, 1983; 72) Asiatic Industrial Gases Ltd., Nidige, Shimoga Dist. 1973; 73) The Southern Gas Ltd., Bhadravathi, 1978; 74) IBIS Health Aids Ltd. Tumkur, 1986; 75) Ballapur Industries Ltd. Kumta Karwar, 1976; 76) Munirabad

Chemical Co., Munirabad, Raichur Dt. 1972.

Textiles: 77) Gogte Textile Ltd. Belgaum, 1980, 78) Gokak Mills, Gokak Falls, 1885; 79) The Belgaum Co-operative Spinning Mills Ltd., Balekundri, 1961; 80) Bellary Spinning and Weaving Co., Ltd., Bellary, 1962; 81) Jyothi Rexine Industries (P) Ltd. Bidar, 1984; 82) The Bagalkot Co-operative Spinning Mills Ltd., Bagalkot, 1961; 83) The Banahatti Co-operative Spinning Mill Ltd., Banahatti, 1975; 84) The Bijapur Co-operative Spinning Mill Ltd., Bijapur 1959; 85) Chigateri Mills, Davanagere 1963; 86) Sree Anjaneya Cotton Mills Ltd. Davanagere, 1962; 87) Sri Chandrodaya Mills Ltd. Davanagere, 1957; 88) Sri Ganesha Textiles Ltd., Davanagere 1946; 89) Sri Jayalaxmi Textiles, Chitradurga, (N.A); 90) Sree Siddeshwara Textile Mills Pvt. Ltd. Davanagere, 1959; 91) Sree Yellamma Cotton, Woollen and Silk Mills Davanagere (Now under NTC) 1972; 92) The Davanagere Cotton Mills Ltd., Davanagere, 1964; 93) Baliga Exports Pvt. Ltd., Udupi, 1984; 94) Mahadev Textile Mills, Hubli-1898; 95) The Gadag Co-operative Textile Mills Ltd Hulkoti, 1972. 96) Mahaboob Shahi Kulbarga Mills, Gulbarga (now under NTC) 1885; 97) ARCO-Spun Silk India Ltd., Chikballapur, 1980, 98) Spun Silk India Ltd Chikballapur, 1980. 99) CSI Fabrics (P) Ltd. Nanjanagud, 1985, 100) Dunford Fabrics, Mysore, 1985; 101) Government Silk Twisting and Weaving Factory, Kollegal 1953; 102) Government Silk Weaving Factory (Mysore), 1932; 103) Kumarvel Textiles Ltd., Periyapatna 1979; 104) Sree Meenakshi Sundaram Textiles Ltd., Hunsur, 1976; 105) Sridevi Textiles (P) Ltd., Chamarajanagar 1981; 106) Velan Textiles (Pvt) Ltd., Chamarajanagar, 1981 107) The Co-operative Spinning Mills Ltd., Raichu, 1961; 108) Tungabhadra Fibre Industries Ltd., Munirabad, 1984

Papers: 109) Sri Ghataprabha Paper and Boards Ltd. Belgaum, 1977; 110) The Mandya National Paper Mills Ltd., Belagola-Mandya Dt. 1962; 111) Ramagopal Paper Mills (Pvt) Ltd., Nanjangud, 1979; 112) The South India Paper Mills Ltd., Nanjangud, 1959; 113) Tungabhadra Pulp and Board Mills Ltd., Munirabad, 1979; 114) The Mysore Paper Mills Ltd., Bhadravati, 1936; 115) Manaylux Papers and Boards Pvt. Ltd. Yediyur, Kunigal Tq. 1981; 116) The West Coast Paper Mills Ltd., Dandeli, 1955.

Fermentation: 117) Pampasar Distillery Ltd., Chitwadgi, Bellary Dt. 1946; 118) Somaiya Organo Chemicals Ltd., Somcervadi, Bijapur Dt. 1984; 119) Kasutri Foods and Chemicals Ltd., Mysore, 1964.

Food Processing: 120) Dempo-Dairy Industries Ltd., Asongi, Bijapur Dt. 1979; 121) Lakshmi Flour Mills, Davanagere, 1968; 122) Mangalore Roller Flour Mills, Mangalore, 1975; 123) Annapurna Roller Flour Mills Pvt. Ltd., Hubli, 1969; 124) Karnataka Co-operative Milk Producers' Federation Ltd., Dharwad, 1984; 125) Sri Renuka Roller Flour Mills, Devarayapatna, Tumkur, 1980.

Vegetable Oil: 126) Mahanth Oil Industries Pvt. Ltd., Belgaum, 1978; 127) HRG Oil Industries (P) Ltd., Hospet, 1976; 128) Sonda Vegetable Oil

Pvt. Ltd., Bellary, 1982; 129) Bramhappa Tavanappahavar Pvt. Ltd., Davanagere, 1946; 130) Ravi Vegetable Oil Industries, Davanagere, 1956; 131) Ganga Oil Industries Pvt. Ltd., Hubli, 1984; 132) Sangam Solvent Extracts Ltd., Kumarapatna, Dharwad, 1978; 133) The Co-operative Oils Ltd., Gadag, 1959; 134) The Farmers Co-operative Oil Seeds Processing Society Ltd., Binkadakatti-Gadag, 1973; 135) The Modern Mills Ltd., Hubli, 1952; 136) Habib Oil Mills Pvt. Ltd., Srirangapatna, Mandya, 1984; 137) Habib Solvent Extracts Pvt. Ltd., Srirangapatna, Mandya, 1979; 138) Sri Gajanana Rice & Oil Mills Ltd., Mysore, 1944; 139) Ajay Oil Industries (P) Ltd., Hospet, 1958; 140) Ajoomal Lilaram Oil Mills, Raichur, 1958; 141) D. Chandrakanth Bros Oil Mills, Raichur, 1975, 142) Faruk Anwar Company, Raichur, 1945; 143) Karnataka Agro Proteins, Raichur, 1975; 144) Navabharat Oils Private Ltd., Raichur, 1983; 145) Raichur Solvents Ltd., N.A.; 146) Siddanganga Oil Extractions Pvt. Ltd. Tumkur, 1974.

Soaps: 147) Karnataka Soaps and Detergents Ltd., (Sandalwood Division) Shimoga, 1980

Rubber Goods: 148) Supreme Rubber Reclaimers Ltd., Mangalore, 1978; 149) Falcon Tyres Ltd., Mysore, 1975; 150) Vikrant Tyres Ltd., Mysore, 1973; 151) Bangalore Rubbers Ltd., Tumkur, 1984.

Ceramics: 152) Bageshpur Stoneware Pipe Factory, Bageshpur, Hassan Dt. 1983; 153) CARBO-Ceramics Ltd., Mysore, 1981.

Cement: 154) Bagalkot Udyog Ltd., Bagalkot, 1955; 155) Lokapur Cements Pvt. Ltd., Lokapur, Bijapur Dt. 1979; 156) Lakhandaavala Cements (Pvt) Ltd., Ittigehalli, Chitradurga Dist. 1981; 157) Shiva Minerals and Cement Industries Pvt. Ltd., Kanchipura-Chitradurga Dt. 1982; 158) Veda Cements Ltd., Madadakere, Chitradurga Dt. 1978; 159) Southern Asbestos Cement Ltd., Karur, Ranebennur Tq. 1974; 160) Bangalore Cements Pvt. Ltd., Shorapur, 161) Cement Corporation of India (Kurkuna Cement Factory) Sedam, 1972, 162) Karnataka Cement Ltd. Chittapur, 1980; 163) Karnataka Infrastructures Pvt. Ltd., Gulbarga, 1982; 167) Rajashree Cement, Gulbarga, 1984; 168) The Associated Cement Companies Ltd., (Shahabad Cement Works), 1926; 169) The Associated Cement Companies Ltd., (Wadi Cement Works), Gulbarga, 1968; 170) Vasavadatta Cement-Sadam, 1983; 171) Mysore Cements Ltd., Ammasandra, Tumkur, 1958.

Timber: 172) The Indian Plywood Manufacturing Co., Ltd, Karkala, 1971; 173) The Indian Plywood Manufacturing Co., Ltd., Dharwad, 1954; 174) Veneer Mills, Mysore, 1958; 175) The Indian Plywood Manufacturing Co., Ltd., Talaguppa, Shimoga Dt. 1965; 176) Karnataka State Vaneers Ltd., Siddapur, Uttara Kannada, 1974; 177) The Indian Plywood Manufacturing Co., Ltd., Dandeli, 1945.

Miscellaneous: 178) Tungabhadra Minerals Ltd., Toranagallu, Bellary Dt. 1971; 179) Donimalai Iron Ore Mine, Bellary Dt. 1969; 180) Gemini Graphics

Pvt. Ltd. Bidar, 1984; 181) Kudremukh Iron Ore Co., Ltd., Kudremukh, Chikmagalur, 1976; 182) The Hutti Gold Mines Ltd., Ingaldhal, Chitradurga, 1966; 183) Canara Security Press Ltd., Manipal 1982; 184) Dev Fisheries (Pvt) Ltd., Mangalore, 1983; 185) Mangalore Trading Association Pvt. Ltd. Mangalore, 1900; 186) Manipal Power Press, Manipal 1941; 187) Manipal Printers and Publishers Ltd., Manipal 1941; 188) Manipal Prakashana Pvt. Ltd., Manipal; 1982; 189) Manipal Security Press, Manipal, 1984; 190) The Canara Printing & Publishing House Pvt. Ltd, Mangalore; 1938; 191) Kalyadi Copper Unit, Kalyadi, Hassan, 1976; 192) Ornamental Granite Processing Factory, Kattihally, Hassan District, 1986; 193) Bharath Gold Mines Ltd., Oorgaum, K.G.F. Before 1900; 194) HIFAME Private Ltd., Mysore, 1977; 195) Hutti Gold Mines Co., Ltd., Hutti Post, Raichur, 1947; 196) Aradhya Hitech Printing Pvt. Ltd., Tumkur 1985; 197) News Print Factory, Bhadravati.

Hindustan Machine Tools Ltd., Bangalore: HMT established in 1953 with authorised capital of Rs.12 crores increased to Rs. 50 crores and in 1992 it was 100 crores. The value of goods produced in 1955 was Rs. 5.48 lakhs, with 617 employee, in 1981; it was Rs. 88,052.02 lakhs with 27,615 employees in 1992. The subsidiary companies of HMT are the HMT (International) Limited; the HMT Bearings Ltd, and the Praga Tools Ltd. The subsidiary exported goods and technical services amounted to Rs. 4642 lakhs in 1991-92 in HMT (International) Limited. HMT Bearings Limited achieved a turnover of Rs. 3856 lakhs with net profit of Rs. 340 lakhs in the same year. The Praga Tools recorded a turnover of Rs. 4694 lakhs.

Wheel and Axle Plant, Bangalore was commissioned on 15th Sept. 1984 at a cost of Rs. 146 crores. The plant has unique features incorporating the latest designs and technology in the manufacture of Wheels. The technology is unique in Asia. At the time of installation the estimated capacity was 56,700 wheels and 23000 axles. With the introduction of productivity linked incentive scheme in 1990, the plant capacity has been fixed at 67,500 wheels and 35,250 axles. In 1991-92, 69,887 wheels and 43,470 axles were manufactured costing to Rs. 152 crores. As there is a substantial gap between the requirement of wheels and axles for Indian Railways and the actual production capacity available in the country, an augmentation scheme for expansion of wheel and axle plant to 90,000-95,000 wheels and 51,200 axles at a cost of Rs. 41.05 crores is in the offing. The turnover of the plant in crores of rupees since 1984 is given as below: 1984-85 - 7.24; 1985-86 - 36.74; 1986-87; 79.93; 1987-88 77.30 1988-89-7.07; 1989-90-79.20 1990-91-93.63;-1991-92 - 151.91 and 1992-93 (upto Jan 93) - 146.09.

The plant is headed by a General Manager who is assisted by various 'Heads of Departments' and other managers. The strength of staff was 2,015 in 1992-93. The plant is spread over an area of 291 acres of land with a colony of 651 quarters and a 30-bed hospital.

Central Power Research Institute, Bangalore: was established in 1960 with an objective to serve as a national laboratory carrying out applied research in electrical power engineering besides functioning as an independent National Testing and Certification Authority for electrical equipment and components, to ensure reliability and improve, innovate and develop new products. CPRI has number of laboratories and facilities some of which are unique in the country. The Institute is fully equipped to meet the testing, certification, research development and consultancy needs in the area of electrical power systems for utilities and industries. The institute has several research laboratories and testing installations engaged in different specialised fields. The Head Office and main unit Central Research and Testing Laboratory are at Bangalore. The other centres are Bhopal, Muranagar (U.P.), Hyderabad, Nagpur and Thiruvananthapuram.

Add to part I, page 858

POWER

Energy consumption and demand for energy has become exponential in view of the acute imbalance that developed in the power sector. The strategy in respect of power in VII Plan had to be in the direction of diversification and introduction of quick-yielding power projects became imminent. The highest financial priority was given for setting up medium-sized diesel sets and gas turbine sets which have short gestation periods. Besides three mini hydel schemes, a Multi-fuel Thermal Project (coal and oil based) at Mangalore were also planned to be established.

The Government formulated a tentative package consisting of the following measures: (1) Permitting to set up captive hydro plants subject to the payment of royalty, lease, rent etc. (2) Permitting to set up captive plants subject to the payment of royalty. Hydro-electric projects beyond 100 MW was reserved for the State Government.

The power transmission and distribution system is described as characterised by several weaknesses. There are heavy line losses, frequent load shedding and variation in voltage. At the end of VII Plan power generation was 11,108 MW whereas, the demand was 19,756 MW leaving a gap of nearly 8,648 MW. The total import of power and contribution from Central Power sectors amounted to 3,180 MW. It is estimated that the energy demand position in the State by 1996-97 would be about 24,000 MW as per the 14th Survey report.

With a view to meet the acute shortage of power in the State, it was programmed to set up medium-sized diesel sets whose gestating period is less. It was proposed that the total energy with the commissioning of those sets would be around 420 MW.

In order to meet the power demand Government of India was also pursued to expedite laying of gas grid along the coastal line for utilising the associated gas from Bombay High as well as gas pipes from Southern Region for generation of power. Apart from tapping electrical energy from conventional sources, like hydro, thermal, nuclear services, efforts to tap electrical energy from non-conventional sources like wind, solar and wave energy were also made. Initially generation of electricity from wind power was explored. The preliminary survey revealed that the Kappatagudda near Gadag was having a wind source over a belt of 28-30 km. long.

By installing a number of wind mill generators at regular intervals over the entire belt of 30 km, it was estimated that an installed capacity of 100 MW with an annual yield of 200 MU would be possible. Though this proposal was there at the beginning of the VII Plan, it is yet to be commissioned.

The year-wise plan allocation and actual expenditure including surveys and investigations from 1985-86 to 1989-90 are as follows:

Table No.5.12

<i>Year</i>	<i>Plan Allocation Rs.in crores</i>	<i>Expenditure Rs.in crores</i>	<i>Creation of installed capacity in MWs/</i>
1985-86	87.05	87.23	2220 (upto 84-85)
1986-87	110.67	81.32	-
1987-88	139.65	72.43	-
1988-89	132.75	118.40	-
1989-90	173.90	132.12	115
As on 1-4-90	644.02	491.20	425 2645 MW

The programme for VII Plan was to add 581 MW of installed capacity; of this 210 MW were to be from the 2nd unit of Raichur Thermal Power Station; 100 MW from Supa Dam Power House in Kalinadi Stage I; 239 MW from Varahi Hydro Electric Project; and 32 MW from Ghataprabha Dam Power House. There was a short fall of 156 MW during the VII Plan. By the end of VII Plan the installed capacity was 2645 MW. During 1990-91, 2nd unit of Varahi underground power house was commissioned. Third unit of Raichur Thermal Power Station was synchronised on 30th March 1991. By Oct. 1991, the total installed capacity was 3013.4 MW with corresponding energy of 13,665 million units per annum.

The following were the projects completed by 31-3-1991:

1. Kalinadi Hyrdo-Electric Project Stage II: The project is located in Uttara Kannada district. Six units of 135 MW each at Nagjhari power house

and two units of 80 MW each at Supa Dam Power House are under operation. The total installed capacity is 910 (810+100) MW with average annual energy generation of 3350 M. Units.

2. Kalmala Mini Hydel Scheme is the first mini project to be commissioned. It was synchronised on 24-1-90 and it is under operation. The installed capacity is 0.4 MW and the average annual energy generation is 2 M. Units.

3. Varahi Hydro Electric Project in Shimoga district consists of a main dam, pick-up dam, 11 saddle dams, a forebay dam, an inter-connecting channel, water conductor system, underground power house and Mini Dam Power House. The installed capacity is 239 (230+9) MW and average annual energy generation of 1,100 M.Units.

4. Kalinadi Hydro Electric Project Stage II: (a) Kodasalli Dam Power House - in Uttara Kannada district is having an installed capacity of 120 MW with energy generation of 512 MU. The approximate cost is Rs.14,366 lakhs. The probable date of commissioning is Dec.1994. (b) The Kadra Dam and Power House is in Uttara Kannada district consisting of Dam Power House with installed capacity of 150 MU with energy generation of 670 M. Units. The estimated cost is Rs.17,414 lakhs and probable date of commissioning is Dec.94.

5. Ghataprabha Dam Power House is in Belgaum district with an installed capacity of 32 MW with energy generation of 143 M. Units.

6. Gersoppa Hydel Project in Shimoga district, with an installed capacity of 240 MW with energy generation of 600 MW. The estimated cost is Rs.232.00 crores and probable date of commissioning is 1995.

7. Mini Hydel Schemes: Ganekal (1 x 0.35 MW), Sirur (1 x 1 MW) and Mallapur (2 x 45 MW) in Raichur district with energy generation of 58 MU. The Mallapur and Ganekal are to be commissioned.

The following are the power projects in operation in the State as in 30-4-1993:

<i>Sl. Particulars No.</i>	<i>No. of units of each in M/W</i>	<i>Total installed capacity M/W</i>	<i>Avg. Annual energy - generation in M. Units</i>
I. Sharavati Basin:			
1. Sharavathi generating station.	7 x 103.5 + 3 x 89.1	991.8	4380
2. Mahatma Gandhi Hydro Electric Station (KEB Owned)	4x18 + 4x12	120	200
3. Linganamakki Dam Power House.	2x275	55	250
4. Diversion Schemes to Linganamakki Dam Reservoir. Chakra and Savehaku	-	-	508
II. Kalinadi Basin:			
1. Nagajhari Power House	6x135	810	3350
2. Supa Dam Power House	2x50	100	
III. Varahi Basin:			
1. Varashi Under Ground Power House.	2x115	230	1060
2. Mani Dam Power House	2x4.5	9	40
IV. Cauvery Basin:			
1. Shivasamudram Power House (KEB Owned)	6x3 + 4x6	42	140
2. Shimsha Power House (KEB owned)	2x8.6	17.2	130
V. Tungabhadra Basin:			
1. Munirabad Power House.	3x9	27	95
2. TB Dam Right Bank Power House (20% of 36 MW)	4x9	7.2	55
3. Hampi Power House	4x9	7.2	
4. Kalmala Mini Hydel Scheme.	1x0.4	0.4	2
5. Bhadra Dam left Bank Power House.	2x12 + 1x2	26	45
6. Bhadra Dam Right Bank Power House.	1x7.2	7.2	
7. Ghataprabha Dam Power House.	2x16	32	143
8. Shivapur Hydro Electric Project (Private Sector - Bhoruka Steel)	2x9	18	114
9. Sirwar MHS	1x1	1	5
VI. Diesel sets at Yelahanka	1x20	20	120
VII. Raichur Thermal Power Station			
1. State I Unit 1 & 2	2x210	420	2300
2. State II unit 3	1x210	210	1150
Total		3151	14087

Out of total generation 79% i.e., 2501 MW is of Hydra, 20% i.e., 630 MW is of Thermal 1% i.e., 20 MW is of Diescl.

Karnataka Power Corporation:	2892.4 MW (91.8%)
Karnataka Electricity Board	240.6 MW (7.6%)
Private	18 MW (0.6%)

Table No. 5.14

The following are the future power projects in Karnataka.

<i>Sl. Particulars No.</i>	<i>No. of Units and capacity of each</i>	<i>Installed capacity MW</i>	<i>Annual energy generating capacity in M Units</i>
1	2	3	4
KALINADI BASIN			
1. Kalinadi Stage II			
Dandeli Dam Power House	2x30	60	212
2. Kalinadi Stage III	2x200	400	1100
NETRAVATHI BASIN			
3. Sarpadi Barrage Power House	3x30	90	215
4. Netravathi Barrage Power House	2x30	60	150
5. Kumaradhara Barrage Power House	3x16	48	236
6. Gundia High Head Scheme	2x120	240	770
7. Kumaradhara High Head Scheme	2x50	100	330
AGHANASHINI BASIN:			
8. Aghanashini Project	4x150	600	2000
9. Bennehole Scheme	1x50	50	210
MAHADAYI BASIN			
10. Kotni Dam Power House	2x10	20	
11. Tailrace Dam Power House	2x125	250	828
12. Krishnapur Underground Power House.	2x150	300	
CAUVERY BASIN			
13. Shivasamudram Seasonal Scheme	2x135	270	1590
14. Mekedatu Scheme	2x180	360	722
KRISHNA BASIN			
15. Tamanakal Scheme	4x200	800	2500
16. Krishna Barrage PH	3x9	27	96
17. Bheema River Scheme	2x60	120	293
VARAHI BASIN			
18. Varahi Stage II	2x15	230	

1	2	3	4
19. Varahi Irrigation Dam Power House	2x20	40	150
BARAPOLE BASIN			
20. Barapole Hydrel Scheme	3x200	600	1300
Mini hydel schemes diversion schemes Katta, Palna and other diversion schemes to Supa reservoir.	-	-	200
Diversion scheme to Linganamakki, Talakalale and Chakra reservoir.	-	-	400
THERMAL POWER			
21. Raichur Thermal Power Station - Stage III, Unit 5	1x500	500	2675
22. Vijayanagar Thermal Plant (Hospet) Stage I & II	3x500	1500	8025
23. Mysore Thermal Plant Stage I & II	-	160	320

(Source : Karnataka Power Corporation, Bangalore)

It is programmed that by the end of VIII Plan, the power position in the State will be 4320 MW (addition of 1140 MW by KPC and 120 MW by KEB) and 18,879 M units of energy. Energy is the core sector and the investment made in this sector generates direct and indirect employment in all spheres. During the construction of Power projects the direct employment generation is 1,70,668 thousand man-days during VIII Plan and 26,235 man days in 1993-94.

Energy transmission and distribution

Transmission technology is developing at a fast rate and adoption of new technology to suitable long term requirement is inevitable. During the period from 1985-86 to 1989-90, the expenditure for transmission and distribution was Rs. 60.63 (in crores), (1985-86), 67.20 (1986-87), 75.64 (1987-88), 87.51 (1988-89) and 88.89 (1989-90). The total allocation proposed in VIII Plan is Rs.1,100.09 crores. The broad investment thrust has to provide sufficient generating capacity from new generative projects likely to be available during VIII Plan and to improve the reliability and quality of power supply by providing sufficient sub-station capacity and associated transmission and distribution system network. It has been contemplated to bring down the transmission and distribution losses during the VIII Five Year Plan to 18% by the end of the plan period, by providing reactive compensation to an extent of 600 MVAR. The programme of bringing down is as follows: 1993-1994-18.4%, 1994-95 - 18%. In spite of many constraints the major achievements during the decade (1982-1992 in respect of transmission lines and substations are the following):

1. Execution of 90 kms long-first 400 KV DC transmission line from Talaguppa to Shimoga.

2. Looping in and looping out 400 KV. Nagarjunasagar - Munirabad SC line through Raichur Thermal Power Station.

220 KV. Transmission lines.

1. Shimoga - Mysore SC on DC Towers 220 ckt kms in 1985-86		
2. Hoody - Gowribidanur ckt kms	SC.84	85-86
3. R.T.P.S - Raichur 16 ckt kms		86-87
4. RTPS - Munirabad 200 ckt. kms		86-87
5. LI, LO Peenya - Singarpet line at Subramanyapura DC - 1.29 ckt kms.		86-87
6. Hubli-Mhalingapur SC. 130 ckt. kms		86-87
7. LI-LO Peenya-Mysore at somanahali DC 6 ckt. kms		87-88
8. Peenya to Tap point on Peenya-Hoody Line 7 ckt. kms		87-88
9. Hoody-Malur SC. 25 ckt. kms		87-88
10. Malur-Kolar SC. 26 ckt. kms		88-89
11. Peenya-Singarpet 14 ckt.km.		89-90
12. NTPC - Lingapur DC 8.5 ckt.		89-90
13. Davanagere - Gowribidanur 215 ckt.		89-90

220 KV Stations

1. Additional 110 MVA 220, 66 KV at Hootagalli, Mysore		85-86
2. Raichur INMVA - 220 10 KV		86-87
3. Subramanyapura 100 MVA - 220 66 KV		86-87
4. Somanahalli 110 MVA 220, 66 KV		86-87
5. Gowribidanur - 50 MVA, 220, 66 KV		86-87
6. Davanagere 1x100 MVA, 220, 66 KV (replacement)		86-87
7. Mahalingapur 100 MVA, 220, 110 KV. Transformer		86-87
8. Gowribidanur Transformer - 2nd 50 MVA 220, 66 KV		86-87
9. Mahalingapur 2nd 10 MVA 220, 110 KV		87-88
10. Kolar 100 MVA, 220, 66 KV Transformer		87-88
11. Subramanyapura - 2nd 100 MVA		89-90
12. SRS Kavoov 3rd 100 MVA		89-90

The new 100 KV stations commissioned with associated transmission lines are Gangavathi, Turuvekere, Hukkeri, Bidar (Chidri), Pattar, Bijapur, Udupi, Karwar, Banavara, Ranebennur, Karjagi, Jamkandi, Ambewadi, Bellary South, MK Hubli, Mudhol and Naregal.

The physical achievement during the period under various sectors are as given in the table.

Table No. 5.15

<i>Sl. Voltage No. MVA</i>	<i>Transmission lines C.Kms</i>	<i>New MVA</i>	<i>Sub stations Modifications</i>
1. 220 KV	953.5	700	340
2. 110 KV	407.50	250	371
3. 65 KV	389	238.6	170.9
4. 33 KV	859.5	254	110

The percentage of transmission and distribution losses in the system from 1985-86 to 1989-90 are as follows: 1985-86 - 22.79%; 86-87 - 22.85%; 87-88 - 21.07%; 88-89 - 20.00%; 1990-91 - 19.6% and 1991-92 - 19.3%;

The number of new installations serviced are:

1985-86 - 267,709; 1986-87 - 2,64,355; 1987-88 - 2,76,222; 1988-89 - 2,73,693; 1989-90 - 2,79,650; 1990-91 - 2,84,504; and 1991-92 - 3,00,000.

Katnataka has achieved 100 per cent village electrification in the decade. The details are given in table.

Table No. 5.16
Rural Electrification Programme

<i>Sl. Details No.</i>	<i>1985-90</i>	<i>1990-91</i>	<i>1991-92</i>
1. Electrification of hamlets	2009	186	400
2. Harijan Basthis	3187	295	600
3. Tribal Colonies	193	34	50
4. Bhagyajyothi schemes	1,42,166	7,383	20,000
5. Energisation of pumpsets	2,29,883	10,138	60,000

Master Plans for cities viz., Bangalore, Mysore, Hubli, Dharwad, Belgaum, Mangalore, Gulbarga, Bellary and Davanagere have been formulated with a view to meet the load growth upto 2000 A.D. and to ensure a reliable and uninterrupted power supply and to reduce the losses in the system. The Yelahanka Diesel generating set is installed at the beginning in this Plan.

During the VIII Plan, it is proposed to instal 37,000 bio-gas plants, 50 institutional/community/bio-gas plants, 6,00,000 improved wood burning stoves for augmenting the power position. The investment thrust in the VIII Plan period are 1) to provide sufficient new evacuation capacity from new generation projects, 2) to provide necessary sub-station capacity and transmission and distribution system, 3) to reduce the energy loss from 20% to 18%, 4)

to create 400 KV network in the State Grid by running a 400 KV transmission line from Sharavathy to Bangalore and also by linking Kali generation to Bangalore through 400 KV line through Davanagere. The abstract of transmission lines and sub-stations planned in VIII Plan are given in the Table.

Table No. 5.17

Sl. Lines No.	Transmission lines Ckt		Sub-stations MVA	Modification	
	Kms (circuit kms)	New		No	MVA
1. 400 KV	1598	4	1945	-	-
2. 220 KV	1653	16	2500	5	500
3. 110 KV	548	18	375	17	145
4. 66 KV	339	30	501.2	19	181.4
5. 33 KV	306	15	75	4	20

As at the end of VII Plan, the installed transformer capacity at the upstream transmission voltage level of 220 KV was about 2,900 MVA and at the down stream voltage level of 110 KV and 66 KV was about 4,700 MVA. Thus, there was an imbalance in the installed transformer capacities at the Upstream transmission and down-stream transmission distribution voltage level. To set right this imbalance, it is proposed for higher transformation capacity of 3,100 MVA at 220 KVA and correspondingly lower capacity of 850 MVA at the distribution voltage level of 110 KV and 66 KV.

Table Showing the details of electrical consumption etc. from 1960 to 1990 in the State.

Table 5.18

Particulars	Unit	1960-61	1970-71	1980-81	1990-91
Villages electrified	%	15	31	63	100
Pumpsets energised	000	17	131	309	744
P.C. consumption	KW	40	104	148	243
Industrial consumption	%	84	80	74	50
Domestic consumption	%	8	7	12	16
Agril. consumption	%	3	6	7	31
Other consumption	%	5	7	7	3
T & D Losses	%	13	13.9	8.3	22.0

Source: Socio Economic Indicators DES (1960-91)

Private Sector in Energy Generation

Government of India has formulated a scheme to encourage greater par-

ticipation by private enterprises in electricity generation, supply and distribution. The Government of Karnataka has envisaged a proposal for the generation of atleast 2500 to 3000 MW of Power in coming years. In the case of new industrial units proposing to have captive power units exemption is proposed to be granted for five years from paying electricity tax. The following are the projects identified for private sector participation in the State.

Thermal Projects: Mysore Stage I with an installed capacity of 2x250 MW and II stage with installed capacity of 2x500 MW.

Diesel Generating Sets: D.G. sets at Kolar, Bidar, Indi, Jamkhandi with a total installed capacity of 78 MW.

Hydel Projects: (1) Sarapadi Hydel Project in Dakshina Kannada with an installed capacity of 90 MW; (2) Mahadayi Hydro-Electric Project in Belgaum district with an installed capacity of 345 MW; (3) Kalinadi Hydro Electric Project State III and Dandeli Dam Power House with an installed capacity of 60 MW; and (4) Bedthi Hydel Project with installed capacity of 210 MW.

Mini Hydel Schemes: 1) Kabini Dam Power House 20 MW; 2) Hemavathi RBC 2.0 MW; 3) Kelagoor 2.0 MW; 4) Hemagiri Anicut 1.0 MW; (5) Laxmanathirtha - (Capacity not available); 6) Holalu 0.5 MW; (7) Habbakawadi Branch Canal (NA); (8) Iruppu Falls 5.5 MW; 9) Manjodka 4.0 MW; 10) Balyanthara Halla 4.0 MW; 11) Kutapucha 40 MW; 12) Tunga Anicut 20 MW; 13) Hanumanthapura 0.4 MW; 14) Payaswini MHS 3.0 MW; 15) Mulki Dam 4.0 MW; 16) Shivayogi Mandira 3.0 MW; 17) Karanja 1.0 MW; 18) Upper Kaveri 3.5 MW; 19) Narayanapura Left Bank Canal 8.5 MW; 20) Yagachi 1.0 MW and 21) Varahi Irrigation Dam 15.0

Wind Energy Projects: Non-conventional energy production using wind power are proposed at the following places:

1. Kappigudda (Dharwad) 2) Jogimatti (Chitradurga) (3) Gokak (Belgaum dist.) (4) Malagatti (5) Hanumasagar (Raichur dist.) (6) Bommanahalli and (7) Hanumanamatti (Dharwad Dist)

Thermal Power Projects proposed to be allotted or already allotted to private sector are: (1) Hospet Thermal Power Station (2x250 MW); (2) Raichur Thermal Power Station (2x250 MW) and (3) Mangalore Thermal Power Station 1000 MW.)

Hydel Projects: (1) Almatti-Narayanapura Dam PH and Tamantkal HEP (600 MW).

Mini Hydel Schemes: (1) (a) Shahpur Branch Canal (6.55), (b) Shivapur MHS 2x9 MW; (2) (a) Anveri MHS 1.30 MW; (4) Malaprabha 2.00 MW;

5(a) Attihalla 0.35 MW, (b) Thippagondanahalli 0.15 MW and (c) Vrishabhavathi Sites 0.25 MW; 6(a) Link Canal MHS - Mandya, 1.5 MW and b) Chunchanakatte Scheme 15.0 MW; 7) Madhavamanthri Anicut Scheme - 3.5 MW;. 8(a) Devara Belekere MHS - 3.0, (b) Maddur MHS - 2.0 and (c) Mudhol MHS - 1.0; (10) Dhupdal MHS 2.8 MW; (11) Keerthi hole MHS 0.21 MW; (12) Hemavathi Irrigation Project Left Bank Canal MHS - 15 MW; 13) Anordka MHS - 9.0 MW; 14) Harangi Left Bank Canal - 4.5 MW; (15) Nugu MHS - 2.0 MW; 16) Varahi Tail race MHS - 15 MW; 17) Elanecru MHS 15 MW; (18) Kabini Right Bank Canal MHS 1.95 and (19) CEE VY MHS 6.5 MW. In total 169.65 MW installed capacity of which Shivapur MHS is already commissioned. Out of 26 MHS, 21 MHS are allotted to 13 Indian firms and 5 MHS to 2 foreign firms.

Karnataka Electricity Board.

Unlike the electricity boards in other states, the Karnataka Electricity Board is vested mainly with the function of transmission at distribution. The KEB purchases power generated by Karnataka Power Corporation at the rates specified from time to time by State Government. Another unique feature is that the two power houses in the Tungabhadra river situated in the State are owned and operated by the Tubgabhadr Board which is represented by the State Government of Karnataka and A.P. and Government of India, and 20% of the energy generated by these stations is the share of Karnataka Electricity Board. Further, there is Central allocation to Karnataka from National Thermal Power Corporation and other agencies. Karnataka has a share of 16% out of this. The following are the salient features of KEB as in 1993 (June): 1) 53,45,805 installations; 2) 45,381 workers; 3) 354 sub-stations of various capacities with an aggregate capacity of 8233.95 MVA; 4) 3,78,543.366 kms of distribution lines; 5) 79,665 distribution transformers with an aggregate capacity of 5,154 MVA; 6) 2,21,948 low tension and commercial power installations; 7) 2,098 high tension installations and 8) 7,33,000 irrigation pump sets energised.

Contribution to the Karnataka State Grid from different Basins

1. Sharavathi Basin	1181.2 MW	37.26%
2. Kalinadi Basin	910 MW	28.77%
3. Raichur Thermal Power Station	630 MW	19.8%
4. Varahi Basin	239 MW	7.57%
5. Tungabhadra Basin (Krishna)	108 MW	3.4%
6. Cauvery Basin	59.2 MW	1.86%
7. D.G. Set Station	42.6 MW	1.34%

Source : Karnataka Power Corporation.