

CHAPTER VI

TRENDS IN PRODUCTION OF SUGAR CANE AND SUGAR INDUSTRY  
IN INDIA

Trends in production of sugar cane and sugar industry in India

The sugar industry is the second most important large scale industry in India, employing about 2 lakh persons. The total output of the mills is about 4 million tonnes. Though the first sugar mill was started in 1903, the development of the industry on modern lines started from 1931-32, when the Government granted protection to it. At present the total number of mills in India is about 220. The following table shows a comparative study of the distribution of sugar mills to different states of India from 1965-66 to 1971-72.

Table 96

Distribution of sugar mills in India 1965-66 to 1971-72<sup>1</sup>

States	Number of mills						
	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72
U.P.	71	71	71	71	71	71	71
Bihar	29	29	27	26	28	27	25
Punjab, Hariyana	8	8	8	9	9	9	9
West Bengal	1	1	1	1	1	1	1
Assam	1	1	1	1	1	1	1
Madhya Pradesh	5	4	3	4	5	5	6
Rajasthan	2	2	2	2	3	3	3
Maharashtra	32	33	34	36	41	41	41
Gujarat	3	3	3	3	3	3	3
Orissa	2	2	2	2	2	2	2
Andhra Pradesh	19	19	20	19	19	19	19
Tamil Nadu	14	15	11	15	16	15	16
Mysore	9	8	10	10	10	11	13
Kerala	3	3	3	3	3	3	3
Pondicherry	1	1	1	1	1	1	1
All India (Total)	200	200	200	205	215	216	220

1. Indian Sugar, July, 1972, P. 391.

The production trend in the industry from 1960-61 to the present movement can be obtained from the following table :<sup>2</sup>

Table 97  
Production Trend in the Industry.

Year	Ac. age 000 acre	Production of sugar cane .000 tons.	Total sugar production 000 tons.
1960-61	5,789	104,122	3,021
1961-62	5,988	99,853	2,729
1962-63	5,653	94,466	2,139
1963-64	5,577	104,908	2,573
1964-65	6,328	109,598	3,232
1965-66	6,867	119,642	3,541
1966-67	5,687	92,826	2,151
1967-68	5,057	95,500	2,248
1968-69	6,257	124,676	3,559
1969-70	6,729	131,223	4,261
1970-71	6,566	128,769	3,740
1971-72	6,235	-	3,089
1972-73	2,481	123,978	3,872
1973-74	2,545	-	3,955

2. Indian Sugar, July, 1972, P.384.

Though the production in sugar has increased considerably since 1960-61, the gap between demand and supply is continuously on the increase partly due to growth of population and increasing urbanization.

The problem of increase in sugar supply can be tackled in two ways :

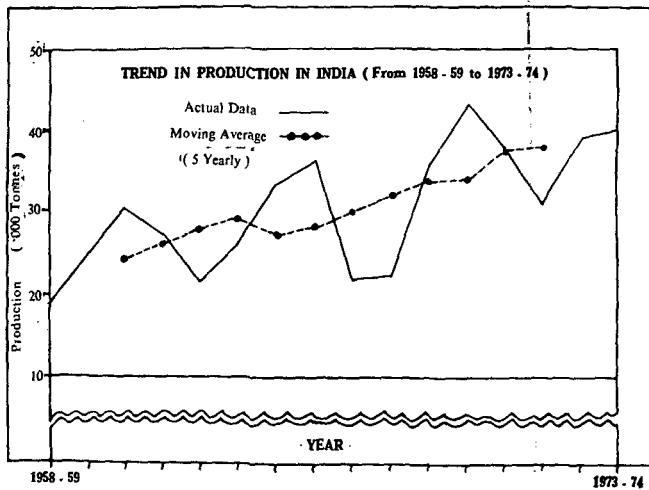
- (1) By increasing the recovery percentage of sugar and by improving the quality of the cane, and
- (2) By increasing yield per acre by the application of nitrogenous manures and water.

A greater economy in the industry can be effected by utilization of molasses, an important by-product of the industry for production of power alcohol (which can be partly used as a motor fuel), and foodyeast (a stratch food). Considering the phenomenyal increase in price of sugar, the industry's production has to be increased considerably. But the production alone cannot solve the problem, unless the product is also equitably distributed throughout the country.<sup>3</sup>

The Planning Commission originally estimated the requirement of sugar at 15.2 lakh tonnes by the end of First Plan (1951-56), but the estimate was raised to 18 lakh tonnes by

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3. Indian Industries, Development and Location, Dr. M.R. Chaudhuri, P. 195.



**Fig. 18**

the mid-plan revision. The industry, however, exceeded the target by 0.92 lakh tonnes. The Second Plan set the target of production to be achieved by 1960-61 at 30 lakh tonnes. In that year, a record production of 30.28 lakh tonnes was achieved by this industry. A production target of 35 lakh tonnes was fixed during the Third Plan Period; but in 1965-66 session, the last year of the plan, the production reached as high as 35.32 lakh tonnes, exceeding the target by 0.32 lakh tonnes. During the subsequent years, the industry could not maintain the production level. In 1966-67 it fell sharply to 21.59 lakh tonnes and recovered marginally to 22.48 lakh tonnes in 1967-68. The following table shows the production of sugar from 1960-61 to 1973-74. The volume of production has also been upward as is found from the above table. Production has, however, fluctuated from year to year. The output was gradually increasing before the pre-war years. But it was decreasing during the war period, and sometime thereafter.<sup>4</sup> The trend values in the production of sugar are calculated by the method of moving average (Fig.18). (Table 97).

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4. Report of the Second Central Wage Board for the Sugar Industry, 1970, P. 29.

Table 97

Calculation of Trend value by the method of moving average for sugar industry.

Year	Production of sugar inds. ('000 tonnes)	5 yearly totals	5 yearly moving average
1958-59	1,951	-	-
1959-60	2,482	-	-
1960-61	3,021	12,322	2,464.4
1961-62	2,729	12,944	2,588.8
1962-63	2,139	13,785	2,757.0
1963-64	2,573	14,305	2,861.0
1964-65	3,323	13,727	2,745.4
1965-66	3,541	13,836	2,767.2
1966-67	2,151	14,822	2,964.4
1967-68	2,248	15,760	3,152.0
1968-69	3,559	15,959	3,311.8
1969-70	4,261	16,897	3,379.4
1970-71	3,740	18,521	3,704.2
1971-72	3,089	18,217	3,783.4
1972-73	3,872	-	-
1973-74	3,955	-	-

From this table (Fig.18) the trend value of sugar production is found.

In the half of the third plan, intensive development schemes were launched in important sugar cane growing states in India. In April, 1963, the scheme was introduced in 25 factories areas in Uttar Pradesh, and in 1967-68, it covered 66 factory areas. In October, 1964, it covered 5 sugar factory areas in Bihar. From April, 1964 the 9 factory zones in Punjab were covered by the scheme. In April, 1964, the scheme covered one factory area in Madhya Pradesh, and it extended to 4 more factory areas in 1965-66. In Maharashtra 20 co-operative factory zones were brought under the scheme in 1964-65, but during October, 1964, 3 co-operative factory zones were covered in Andhra Pradesh and one more added in November, 1965. In Tamil Nadu, the one factory area a package programme was introduced in August 1961. During 1967-68 it extended to 4 more factory areas. In all the 8 factory zones of Mysore state a comprehensive scheme for sugar cane development was introduced during April, 1958.<sup>5</sup>

According to the Indian Sugar Mill Association, the total sugar production in the month of April, 1972, was about 1.93 lakh tonnes as against 4.25 lakh tonnes during the corresponding period last season. This brings the total production during the first seven months of the season 1971-72 to 30.01 lakh tonnes as against 35.10 lakh tonnes in the corresponding period last season.<sup>6</sup>

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5. Indian Sugar, May, 1972, PP. 69-71.

6. Indian Sugar, May, 1972, PP. 69-71.



The following figures show the sugar production directly from the cane and also show the variation at the trend of production in India in different years.

Table 98

Total production estimated consumption and percapita consumption of sugar in India from 1931-32 to 1960-61.<sup>7</sup>

Year	Total production (Thousand in tonnes)	Consumption (thousand tonnes)	Per Capita consumption <u>Kgms.</u>
1931-32	472	982	2.8
1932-33	645	1006	2.5
1933-34	719	996	2.5
1934-35	772	1059	2.5
1935-36	1105	1077	2.9
1936-37	1237	1167	3.3
1937-38	1047	1159	3.3
1938-39	749	1043	3.0
1939-40	1350	1074	2.9
1940-41	1272	1376	3.9
1941-42	863	1132	3.2
1942-43	1256	1228	4.0
1943-44	1346	1238	2.9
1944-45	1063	1236	3.6
1945-46	1034	1048	2.7
1946-47	1002	972	2.7
1947-48	1185	1045	3.4
1948-49	1125	1182	4.0
1949-50	1158	1184	3.2
1950-51	1227	1204	3.0
1951-52	1584	1274	3.3
1952-53	1407	1734	4.5
1953-54	1097	1922	4.9
1954-55	1741	1950	4.5
1955-56	2013	2000	5.2
1956-57	2210	1980	5.2
1957-58	2203	2020	5.2
1958-59	2221	2100	5.4
1959-60	2650	2372	5.4
1960-61	2986	2242	4.9

The above graph shows a salient feature of total production, consumption and percapita consumption of the sugar industry in India in different years.

The following table also shows the production of sugar (directly from cane) in India from 1930-31 to 1960-61<sup>8</sup>

Table 99

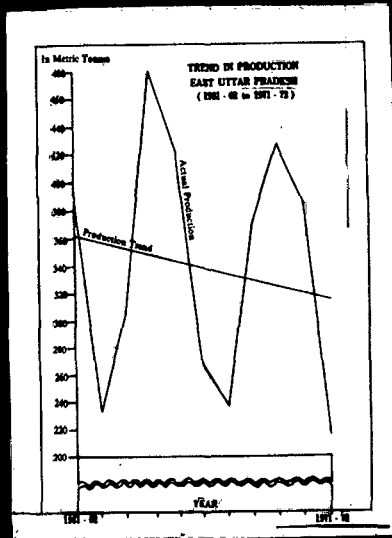
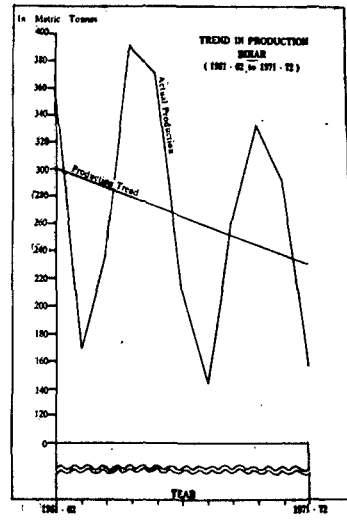
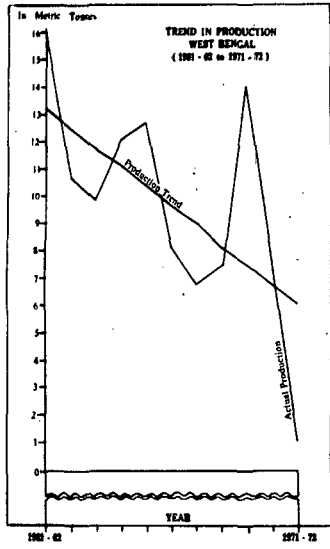
Year	Tonnes	Year	Tonnes	Year	Tonnes
1930-31	1,19,859	1941-42	7,51,400	1952-53	13,19,488
1931-32	1,58,581	1942-43	10,91,800	1953-54	10,01,214
1932-33	2,90,177	1943-44	12,00,600	1954-55	15,89,730
1933-34	4,53,965	1944-45	9,42,200	1955-56	18,61,837
1934-35	5,78,115	1945-46	9,22,900	1956-57	20,26,179
1935-36	9,32,100	1946-47	9,01,100	1957-58	19,77,794
1936-37	11,11,400	1947-48	10,74,800	1958-59	9,18,197
1937-38	9,30,700	1948-49	10,05,369	1959-60	24,20,872
1938-39	6,50,809	1949-50	9,75,358	1960-61	29,80,689
1939-40	12,07,800	1950-51	11,00,821		
1940-41	10,46,100	1951-52	14,83,160		

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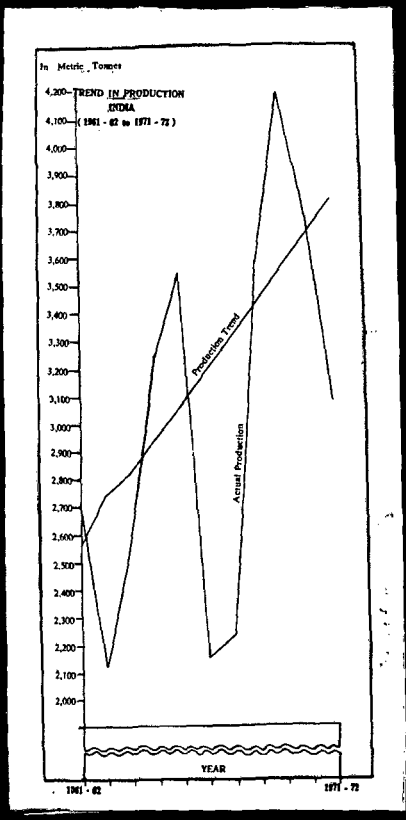
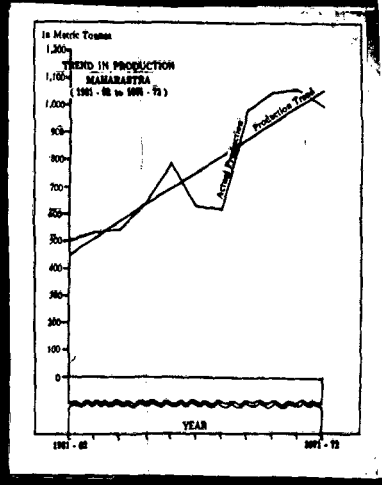
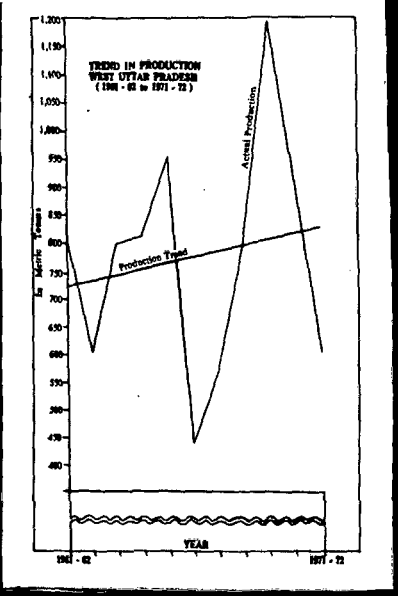
The graph shows production of sugar (directly from the cane) which fluctuates from one year to another in India.

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8. Indian Sugar Cane Atlas. 1962.



**Fig. 19**



**Fig. 19**

The time series analysis shows the trend value of sugar production (directly from the cane) in West Bengal, Bihar, Uttar Pradesh, Maharashtra and rest of India from 1961-62 to 1971-72 (Fig. 19), (Table - 100).<sup>9</sup>

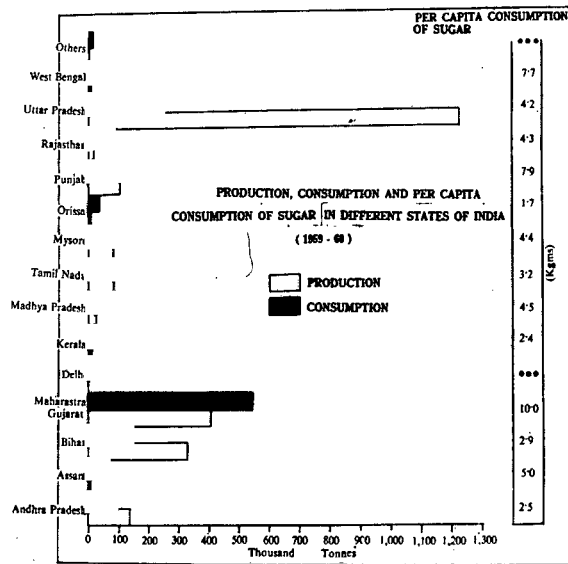
Table 100  
Trend Value Of Sugar Production  
(Directly From Cane)

( M. Tonnes )

YEAR	West Bengal	Bihar	E. U.P.	W. U.P.	Maha rash tra	Whole of India
1961-62	16081	358,677	393,950	809,580	507,419	273041
1962-63	10773	170,033	231,504	611,117	530,230	213518
1963-64	9887	237,873	304,452	799,949	546,671	256234
1964-65	11989	391,631	480,118	811,879	636,387	323178
1965-66	12629	370,989	422,763	951,832	780,784	353235
1966-67	8108	211,333	266,613	444,028	639,332	215894
1967-68	6754	146,959	239,011	571,222	620,435	224265
1968-69	7490	259,585	372,124	802,587	980,669	355790
1969-70	14034	332,522	428,354	1195,486	1,042,626	426560
1970-71	7660	293,799	382,991	916,402	1,054,884	374038
1971-72	1000	152,000	215,000	625,000	1,000,000	310000

Here, the graphs show a salient feature of fluctuation in production in particular states like West Bengal, Bihar, East Uttar Pradesh, West Uttar Pradesh, Maharashtra, and also whole of India. From these graphs the comparative study and trend value of sugar production from 1961-62 to 1971-72 are found. It is clearly understood that in the recent years trend in production is going to downwards from the previous years. This upward and downward movement of production indicate the various problems which influence the trend value of sugar production.

9. Indian Sugar, July, 1972, Pp. 388.



**Fig. 29**

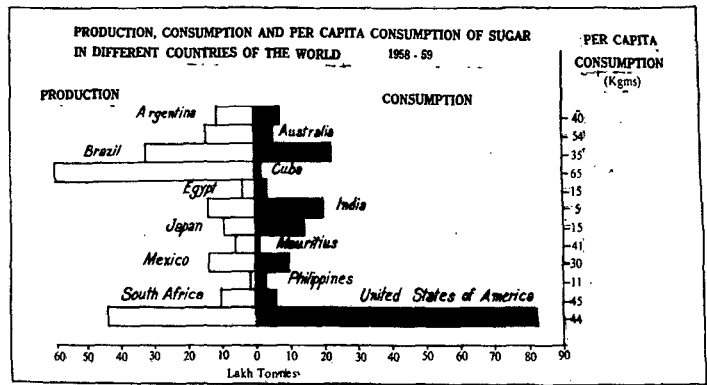
From the following table, the production, consumption and per-capatia consumption of sugar are found in different states of India and also in different countries of the world and from this comparative study, it is easy to understand the production in different states of our country and also in the different countries of the world in a particular period. The tables below show : (Table 101,102, Fig.No.20,21).

Table 101

Production consumption percapita consumption of sugar in different states in India (1959-60)<sup>10</sup> (Fig.No.20)

States	Production thousand tonnes	Consumption thousand tonnes	Percapita consumption (Kgs.)
Andhra Pradesh	137	86	2.5
Assam	4	60	5.0
Bihar	325	140	2.9
Bombay (Maharashtra and Gujarat)	401	545	10.0
Delhi	10	61	2.4
Kerala	28	132	4.5
Madhya Pradesh	84	126	3.2
Madras (Tamil Nadu)	86	89	4.5
Mysore	3	33	1.7
Orissa	101	148	7.9
Punjab	12	75	4.3
Rajasthan	1,221	244	4.2
U.P.	9	17	7.7

10. Indian Sugar Cane Atlas, 1962.



**Fig. 27**



Table 102

Production and percapita consumption of sugar in different countries of the world - (1958-59)<sup>11</sup> (fig.no.21)

Country	Production (Lakh tonnes)	Consumption (Lakh tonnes)	Percapita consumption (Kgs.)
1. Argentina	11.3	7.32	35.4
2. Australia	14.3	5.40	53.6
3. Brazil	32.2	22.54	34.8
4. Cuba	59.5	2.42	46.8
5. Egypt	3.2	3.20	15.0
6. India	19.18	20.80	5.3
7. Japan & Formoza	9.3	13.02	14.7
8. U. S. A.	44.04	82.25	43.7
9. Mauritius	5.3	0.25	41.0
10. Mexico	13.9	9.35	29.3
11. Philipines	1.2	3.13	11.0
12. South Africa	10.3	6.84	45.0

11. Indian Sugar Cane Atlas, 1962.

Table 103

Production and percapita consumption of sugar in different countries of the world - 1965 and 1970 13

Country	1965		1970	
	Production (Metric tonnes Raw value)	Production (Metric tonnes Raw value)	Percapita consumption (KGM Raw value)	Percapita consumption (KGM Raw value)
1. Argentina	C. 1,309,287	C. 976,025	41.2	39.4
2. Australia	C. 2,078,170	C. 2,506,853	58.0	56.0
3. Brazil	C. 4,613,792	C. 5,019,219	36.5	37.5
4. Cuba	C. 6,082,158	C. 7,558,569	64-8	72.9
5. Egypt	C. 404,000	C. 495,000	18.3	15.6
6. India	C. 3,493,001	C. 4,634,226	5.7	6.9
7. Japan	b. 213,341	b. 342,682	20.6	29.0
8. U.S.A.	b. 2,761,042	b. 3,185,200	47.5	50.8
9. Mauritius	C. 704,134	C. 610,776	40.5	41.7
10. Mexico	C. 2,120,516	C. 2,402,015	34.5	41.2
11. Phillipines	C. 1,658,609	C. 1,980,004	16.0	16.6
12. South Africa	C. 1,014,340	C. 1,678,689	45.7	39.7

C. Cane sugar, b. beet sugar

The above tables show the position of India regarding the production, consumption and percapita consumption of sugar in 1958-59 and in 1965 and 1970 with other countries of the world.

12. Indian Sugar, July, 1972, P. 404-413.

The off take of sugar from factories during the month of April, 1972 was about 2.99 lakh tonnes for internal consumption and 24,000 tonnes for exports as against about 3.36 lakh tonnes in the corresponding period last season. The total despatches in the first seven months in 1971-72 were 22.92 lakh tonnes for internal consumption and 80,000 tonnes for exports as against 22.17 lakh tonnes for exports during the corresponding period last season.

The total closing stock of sugar with the factories on 30th April, 1972 was about 20.34 lakh tonnes as against about 31.60 lakh tonnes on the same date last season.

The trend in production in different regions indicates variation of production and physical stock of sugar industry in India. Therefore, the following table shows the total production and physical stock of Sugar Industry in India on 15th September, 1970.<sup>13</sup>

Table 104

(Production & Stock figures are in qtls.)

S1. Name of States No.	Production 15th Sept., 1970	Stock as on 15th Sept. 1970 inclu- ding carry over stock of 1968-69 season	Percent of stock to production
1. West Bengal	1,40,317	74,211	52.85
2. South Bihar	1,06,470	58,000	54.46
3. North Bihar	31,86,936	17,45,480	54.77
4. Total Bihar	32,93,406	18,03,480	54.75
5. Eastern UP.	42,90,345	23,38,340	54.49
Western UP			
Group 'A'	39,27,154	23,22,836	59.14
" 'B'	16,41,870	9,83,720	59.91
" 'C'	41,50,783	24,84,910	59.86
" 'D'	22,62,859	12,64,323	55.87
6. Total UP	1,62,73,011	93,94,129	57.72
7. Maharashtra	1,04,15,627	41,73,983	40.07
8. Gujarat	9,87,181	4,19,404	42.48
9. Punjab	6,95,303	4,30,890	61.92
10. Haryana	9,75,770	4,99,213	51.16
11. Tamil Nadu	28,47,449	17,46,114	61.27
12. Orissa	1,67,677	85,290	50.86
13. Andhra Pradesh	33,68,892	20,76,551	61.27
14. Madhya Pradesh	3,72,864	2,56,331	68.74
15. Kerala	2,05,230	1,10,806	53.97
16. Mysore	23,49,822	14,28,022	60.77
17. Rajasthan	1,80,417	1,07,130	59.35
18. Pondicherry	1,44,623	1,01,216	69.95
19. Assam	1,03,840	60,000	57.69
ALL INDIA	4,25,21,429	2,27,66,770	53.54

13. Report of the Committee, Indian Sugar Mill Association, 1970, P. 53.

The Table 105 shows the Statewise installed capacity in terms of annual sugar production

Table 105

Statewise installed capacity in terms of annual Sugar production<sup>14</sup>

(Production Thousand Metric Tonnes)

State	Capacity lakh tonnes							
	1950-51		1955-56		1960-61		1961-62	
	Capacity	Production	Capacity	Production	Capacity	Production	Capacity	Production
Uttar Pradesh	8.55	2959	8.80	2987	10.23	5471	10.37	5045
Bihar	3.43	314	3.45	297	3.57	704	3.59	623
Haryana & Punjab	0.45	369	0.46	565	1.04	1014	1.04	870
Madhya Pradesh	0.34	55	0.36	117	0.36	136	0.41	140
Rajasthan	0.13	16	0.19	46	0.13	101	0.13	881
West Bengal	0.10	87	0.10	131	0.17	206	0.17	179
Orissa	0.03	108	0.03	94	0.03	70	0.03	74
Assam	-	69	-	67	0.10	88	0.10	107
Maharashtra	1.63	551	2.06	562	4.44	939	4.44	946
Andhra Pradesh	. 03	-	1.03	524	1.44	660	1.75	750
Madras	0.50	697	0.68	347	1.25	639	1.25	627
Mysore	0.41	100	0.49	295	1.19	450	1.19	479
Gujarat	-	-	0.06	-	0.28	92	0.45	110
Kerala	0.06	-	0.06	34	0.05	37	0.06	37
Pondicherry	-	-	-	-	0.18	-	0.18	-

14. Indian Sugar Year Book, 1971-72, P. 47.

Table 105

Statewise installed capacity in terms of Annual sugar production (pro. thousand Metric ton  
(Capacity - lakh tonnes)

State	1962-63		1963-64		1964-65		1965-66	
	Capacity	Production	Capacity	Production	Capacity	Production	Capacity	Production
Uttar Pradesh	10.57	4252	11.18	4755	11.73	5624	12.63	5674
Bihar	3.59	480	3.67	517	3.84	686	3.85	604
Haryana & Punjab	1.19	831	1.30	893	1.30	1133	1.30	1315
Madhya Pradesh	0.41	142	0.41	129	0.46	179	0.46	161
Rajasthan	0.13	81	0.13	58	0.13	64	0.19	73
West Bengal	0.22	133	0.22	154	0.22	190	0.22	179
Orissa	0.03	155	0.18	195	0.18	200	0.18	230
Assam	0.19	98	0.10	105	0.10	125	0.10	106
Maharashtra	4.92	1078	5.50	1133	5.56	1002	5.88	1020
Andhra Pradesh	2.37	800	2.45	1111	2.61	1219	2.67	951
Madras	1.44	913	1.60	667	2.01	696	2.35	715
Mysore	1.19	571	1.19	663	1.29	599	1.48	531
Gujarat	0.45	103	0.45	134	0.45	238	0.45	196
Kerala	0.06	41	0.18	44	0.31	44	0.31	41
Pondicherry	0.18	-	0.18	12	0.18	17	0.18	19

(Pro.thousand Met.Ton.)

Table 105

Statewise installed capacity in terms of Annual sugar production

Capacity  
(Lakh tonnes)

State	1966-67		1967-68		1968-69-70	
	Capacity	Production	Capacity	Production	Capacity	Production
Uttar Pradesh	12.89	3937	13.04	3791	13.05	5054
Bihar	3.93	440	3.93	403	4.04	591
Haryana & Punjab	1.32	946	1.32	926	1.47	1284
Madhya Pradesh	0.46	689	0.48	887	0.48	1484
Rajasthan	0.22	39	0.22	31	0.22	52
West Bengal	0.22	130	0.22	118	0.15	118
Orissa	0.18	177	0.20	181	0.20	211
Assam	0.10	101	0.10	117	0.10	121
Maharashtra	6.37	998	6.75	1049	7.35	1428
Andhra Pradesh	2.85	803	2.86	992	2.86	1274
Madras	2.61	689	2.68	887	2.68	1484
Mysore	1.61	693	1.61	735	1.99	909
Gujarat	0.54	140	0.79	149	1.04	166
Kerala	0.31	5	0.31	50	0.31	50
Pondicherry	0.18	13	0.18	10	0.18	20

To-day India has the enviable position not only for having largest acreage under cane cultivation, but also for being the biggest producer of cane in the world. The tropical and subtropical zones are the main important cane cultivated areas. Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu, Pondicherry, Mysore and Kerala are the main areas of cane cultivation. Table 97 given the yearwise figures of the area under cane cultivation from 1960-61 to 1973-74. Table 97 shows the figures of sugarcane acreage. In 1965-66 it was 6867 thousand acres, slightly more than that of all other years. The area of sugar cane cultivation has been fluctuating from year after year.

A significant development of sugar industry in India has been possible due to the growth of co-operative sugar factories. Its growth became rapid when the Government decided to give them preference in licensing under the Industries (Development and Regulation) Act, 1951.

The gradual decline in sugar production onwards from 1969-70 (Table 97 ) has helped in widening the gap between demand and supply of the commodity. The desirability of increasing yield per acre in the field and recovery percentage in the factory can thus hardly be questioned. The present sugar crisis can be overcome not only by increasing production but also by equitable distribution of sugar throughout the country.<sup>15</sup>

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15. Industrial Situation in India, October, 1972. PP. 12-13