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AGRO BASED INDUSTRIES – A CASE STUDY OF SUGAR INDUSTRIES IN INDIA

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Abstract:-Agriculture continues to be the largest and the most important sector of India. It contributes near about 14% to the country's GDP & provides large number of employment in rural as well as semi urban area. It becomes base for livelihood for large the population .

Keywords:Sugar Industries , Agriculture , structural , Agro based Industries .

INTRODUCTION:-

The Indian agriculture has undergone significant structural changes during the post independence period. Green revolution white revolution and blue revolution brought revolutionary changes in this sector resulting in increased production and surplus.

Agro based industries are the extended arms of agriculture as processes agricultural products and convert them into usable or edible forms since pre independence period. The development of agro- based industries started. After independence this development was encouraged in order to provide more employment opportunities to the people and make optimum utilization of physical and human sources in the local area. The development of agro-based industries has got an important place in the Indian economy.

SUGAR INDUSTRY

Sugar Industry is the second largest agro- based industry after the cotton textile industry and plays an eminent role in the economic life of India. More than 7% of the rural population is sugarcane farms and their families. This sector provides direct employment to near about 3,50,000 workers and also provides indirect employment through various ancillary activities.

Sugar is made from sugarcane and sugarcane is major crop in many of countries in the world. Top ten sugarcane producers in the in the world are shown in table 1.

Table 1 : Top ten sugarcane producers in the world

No	Country	Production (TMT)
1	Brazil	734,000
2	India	342,382
3	People's Republic of chain	115,124
4	Thailand	95,950
5	Pakistan	55,309

6	Mexico	49,735
7	Philippines	34,000
8	United States	26,656
9	Australia	25,182
10	Argentina	25,000
	other	291021
	Total	1,794,359

Source: Food and Agricultural Organization of United Nations:
Economic and Social Department : The Statistical Division

Brazil stands first in sugarcane production with 734000 TMT tons harvest. India is the second largest producer with 342382 TMT and China is the third largest producer with 115125 TMT tons harvest. Thailand, Pakistan, Mexico, Philippines, U.S., Australia, Argentina are the other major sugarcane producing countries in the world.

Sugarcane Production in India

Table 2 Area Production and Productivity of sugarcane in India

Year	Area '000 ha	Production (million tons)	Yield t/lha
2001-02	4316	298422	67.5
2001-03	4361	281575	64.6
2001-04	3938	233862	59.4
2001-05	3662	237088	64.8
2001-06	4201	281172	66.9
2001-07	5151	355520	69.0
2001-08	5055	348188	68.9
2001-09	4415	285029	64.6
2001-10	4175	292302	70.0
2001-11	4944	339168	68.6

From table 2 it is clear that area under sugarcane cultivation was highest at 5151 thousand in the year 2006-07, production was also highest in the year 2006-07 where as productivity was highest in 2009-10.

Table 3 State-wise area production & productivity of sugarcane in India (2010-11)

States	Area	Production	Productivity
Bihar	300	15000	50.0
Haryana	85	5987	70.4
Punjab	70	4170	59.6
Uttar Pradesh	2125	120555	56.7
Andhra Pradesh	192	14784	77.0
Gujarat	188	14240	75.7
Karnataka	421	37595	89.3
Madhya Pradesh	65	2667	41.0
Maharashtra	964	78838	81.6
Orissa	13	903	68.7
Tamilnadu	336	34292	102.0

Source: Cooperative Sugar Vol. 43 (4), Dec 2011

From the above tables no 3 it is clear that Andhra Pradesh, Uttar Pradesh, Gujarat, Maharashtra are the major sugarcane producing states in India. Area under sugarcane cultivation is highest in the case of Uttar Pradesh followed by Maharashtra, Karnataka, Bihar.

CONSUMPTION

Sugar is an item of mass consumption as it is a cheap source of energy. Sugar consumption is highest in India as shown in the statistics received from USDA. Per capital consumption of sugar and gur-khandsari in India is shown in table 5

Table 5: . Per capital consumption of sugar and gur-khandsari in India

year	Total consumption of sugar (lakh Tons)	Per capita sugar (kg/year)	Total consumption of gur and khandsari (lakh Tons)	Per capital consumption of gur and khandsari (kg/year)
1960-61	21.13	4.8	66.87	15.2
1970-71	40.25	7.4	74.37	13.6
1980-81	@49.80	7.3	85.22	12.5
1990-91	107.15	12.9	90.71	10.9
2000-01	162.00	15.8	86.09	8.4
2010-11*	207.36	17.5	59.94	5.1

Source: Cooperative Sugar Vol 43 (4), Dec 2011

*Provisional, @ includes imported sugar

Although production of sugar has shown fluctuating trend the consumption of sugar showed steady increasing trend except in 2003-04.

It can be seen from the table that total consumption in 1960-61 was 21.13 lakh tons. It went up to 40.25 lakh tons in 1970-71, 49.80 lakh tons in 1980-81, 107.15 lakh tons in 1990-91 and 162.00 lakh tons in 2000-01. In 2010-11 total consumption of sugar went up to 207.36 lakh tons.

Per Capita annual consumption was 4.8 kg/year, it was increased up to 17.5 kg/year in the year 2010-11.

In the case of Gur and Khandsari the total annual consumption showed fluctuation trend. In 1960-61 it was 66.87 lakh tons and in 2010-11 it went to 59.94 lakh tons with some ups and down.

Per Capita annual gur and khandsari consumption showed decreasing trend. In 1960-61 per capita gur and khandsari consumption was 15.2 kg/year. In 2010-11 it was 5.1 kg/year.

So, we can say that per capita consumption of sugar increased during 1960-61 to 2010-11 and per capita consumption of gur and khandsari decreased during the same period.

Steps followed in manufacturing of sugar in India

Generally the manufacture of sugar is comprised of following different process

- a. Extracting juice from the fiber by pressing sugarcane
- b. Removing impurities
- c. Boiling the juice for crystallization
- d. Filtering and washing the raw sugar for discarding remaining non-sugar elements
- e. Drying and packing of sugar in bags.

Scenario of Indian sugar Industry

Sugar industry in India is well developed with a consumer base of more than billions of people. It is growing at a steady pace.

The sugar industry in India is divided into two sectors.

i) Organized Sector - includes all sugar factories.

ii) Unorganized Sector – mainly produce gur and khandasari.

There were total 527 sugar in 2010-11. The statistical information of sugar industry is given in table 4

Table 4: Scenario of Indian sugar Industry

Year	Number of factories in operation	Sugar produced (million tons)	Recovery Per cent
1930-31	29	0.121	8.96
1940-41	148	1.113	9.70
1950-51	139	1.100	9.99
1960-61	174	3.021	9.74
1970-71	215	3.740	9.79
1980-81	315	5.150	9.98
1990-91	385	12.047	9.84
2000-01	436	18.511	10.48
2010-11	527	24.394	10.17

Source: Cooperative Sugar Vol 43 (4), Dec 2011

*Provisional

It can be seen from table 4 that in 1930-31 there were total 29 sugar factories in India & produced 0.120 million tons of sugar. The total number of factories increased up to 527 and production of sugar went up to 24.394 million tons in 2010-11. It means that number of sugar factories go on increasing in the study years.

RECOVERY RATE

Recovery rate means percentage of sugar produced from crushed sugar cane. It plays vital role in sugar production. Higher recovery rate means higher production. So the sugar factories tries to increase recovery rate. In 1930-31 the recovery was 8.96 per cent, in 1940-41 it went up to per cent, in 200-01 it was 10.48 per cent. So we can say that the recovery rate in India was not constant, there were fluctuation in this rate. The highest recovery rate was found in 2008-09.

CONCLUSION

Sugar industry is one of the largest industries in the country and makes significant contribution to the economy of the country. There are total 527 sugar factories located all over India. It provides direct employment to over 4.5 million people and generates sizeable employment in ancillary industries. is the second largest producer of sugarcane in the world.

Andhra Pradesh, Uttar Pradesh, Gujarat, Maharashtra are the major sugarcane producing states in India. Area under sugarcane cultivation is highest in the case of Uttar Pradesh followed by Maharashtra, Karnataka, Bihar. Per capita consumption of sugar increased during 1960-61 to 2010-11 and per capita consumption of gur and kandsari decreased during the same period. in 1930-31 there were total 29 sugar factories in India & produced 0.120 million tons of sugar. The total number of factories increased up to 527 and production of sugar went up to 24.394 million tons in 2010-11. The recovery rate in India was not constant, there were fluctuation in this rate.

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