

Sugar

Domestic Scenario

The Indian Sugar Industry is at a very interesting juncture at this point of time. The sugar cycle has been conventionally understood as following a 4-5 year cycle; 3 years of increasing trend followed by 2 years of declining trend. Higher sugarcane production results in falling sugar prices and non-payment of dues to farmers compelling them to switch to other crops thereby causing a shortage of sugarcane, consequently leading to an increase in sugarcane prices, resulting in an imminent switch back to sugarcane. Such a vicious circle is characteristic of the Indian sugar production. There is now evidence that this cycle is now becoming a 2-3 year cycle. Sugar still stands listed in several states under the purview of the Essential Commodities Act, 1955. Sugar is a politically sensitive commodity, with strong lobbies including the cane growers, sugar mills, gur and khandsari producers, consumers of subsidized sugar having a say in influencing the price. Pressures are often reflected at various central and state levels, which sometimes have independent interests. The government through pragmatic policies can remove or at least minimize the infamous sugar cycle and bring about long term healthy growth of the Indian Sugar Industry and its stake holders.

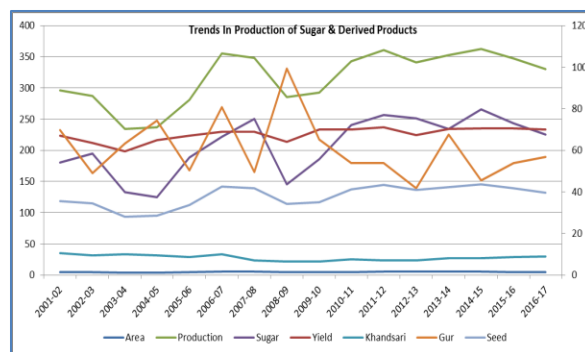
The Indian Sugar Industry, with an annual productive capacity of over 25 MMT, stands out to be the second largest in the world after Brazil, accounting for around 15 per cent of the global sugar production. The country consumes approximately 22 MT of sugar annually, with Maharashtra contributing over 60 per cent of it while the rest of the output come from states like Tamil Nadu, Karnataka, Uttar Pradesh and Madhya Pradesh. The sufficient and well distributed monsoon rains, rapid population growth and substantial increases in sugar production capacity have made India the largest consumer and second largest producer of sugar in the world.

Status of Sugarcane & Sugar production in India (Area - lakh Hectare, Yield – MT /Ha Production - Lakh MT)

Years	Area	Yield	Production	Sugar	Khandsari	Gur	Seed
2001-02	4.41	67.09	295.95	180.32	10.50	69.62	35.51
2002-03	4.52	63.58	287.38	194.33	9.50	49.07	34.49
2003-04	3.94	59.39	233.86	132.51	10.00	63.29	28.06
2004-05	3.66	64.74	237.08	124.77	9.50	74.36	28.45
2005-06	4.20	66.93	281.17	188.67	8.50	50.26	33.74
2006-07	5.15	69.03	355.52	222.00	10.00	80.86	42.66
2007-08	5.06	68.81	348.18	249.91	7.00	49.49	41.78
2008-09	4.44	64.19	285.02	145.00	6.50	99.32	34.20
2009-10	4.18	70.01	292.30	185.55	6.50	65.17	35.08
2010-11	4.89	70.09	342.38	240.00	7.50	53.79	41.09
2011-12	5.08	71.07	361.03	257.00	7.00	53.70	43.32
2012-13	5.06	67.38	341.20	251.50	7.00	41.75	40.94
2013-14	5.01	70.26	352.14	234.32	8.00	67.56	42.25
2014-15	5.14	70.44	362.33	265.40	8.00	45.45	43.48
2015-16	4.92	70.52	347.00	243.00	8.50	53.86	41.64
2016-17	4.71	70.07	330.36	225.00	9.00	56.72	39.64

Source: Directorate of Economic and Statistics, Ministry of Agriculture & ISMA, Figures for 2015/16 and 2016/17 are FAS Estimates.

From the above table it is evident that over the years, the area under sugarcane cultivation has almost been steady and since 2004-05, the area has expanded by 16.44 per cent. The expansion in production of sugarcane is also on the same line and it has increased by 17.20 per cent since 2003-04. The main reason behind slow expansion in production is the lack of improvement in the productivity. In the last 15 years, the production has marginally improved by 0.65 per cent, which highlights the lack of focus on the High Yielding Varieties of sugarcane and research establishments for improving the production in a significant way. In spite of the stagnation in sugarcane production in sugarcane, the production has improved significantly by about 38.94 per cent owing to improved recovery percentage of sugar and decline in quantum of diversion of cane to Gur (25.04 per cent) and Khandsari (40.91 per cent).



State wise Production of Sugarcane in India

(Lakh MT)

STATES/UT	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Uttar Pradesh	118716	125470	133949	124665	109048	117140	120545	128819	132428	134689	126900
Maharashtra	20475	38853	78568	88437	60648	64159	81896	86733	69648	75384	98900
Karnataka	14276	18267	28670	26240	23328	30443	39657	38808	35732	35910	46700
Tamil Nadu	23396	35107	41124	38071	32804	29746	34252	38576	33919	32249	22300
Andhra Pradesh	15739	17656	21692	20296	15380	11708	14964	16686	15567	15168	13900
Gujarat	14570	14580	15630	15190	15510	12400	13760	12750	12690	12630	13200
Bihar	4112	4338	5956	3855	4960	5033	12764	11289	12741	13157	14900
Haryana	8060	8180	9580	8860	5130	5335	6042	6959	7437	7446	7900
Uttaranchal	6441	6134	6100	7686	5590	5842	6498	6311	6785	6427	6100
Punjab	5170	4860	6020	6690	4670	3700	4170	5653	5919	6372	6600
Others	6134	7728	8231	8198	7961	6796	7835	8453	8334	8952	9400
All India	237088	281172	355520	348188	285029	292302	342382	361037	341200	348384	366800

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation

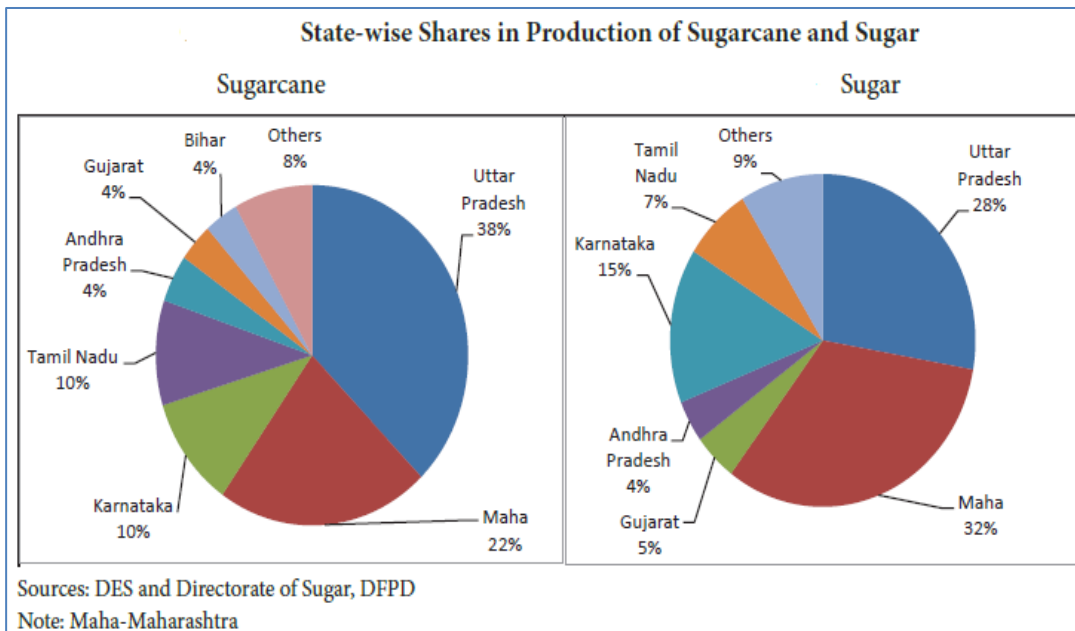
Sugarcane output for the marketing year October–September Improved in 2014-15 by 6.55 per cent over the production level in 2013-14. The improvement was seen on account of the higher Fair and Remunerative Price (FRP) set by the Commission on Agricultural Costs and Prices to Rs 230 per quintal. Latest media report indicate that the Commission for Agricultural Costs and Prices, GOI has recommended a FRP for sugar season 2016/17 at INR 230 per quintal at 9.5 percent recovery level. With every increase in recovery by 0.1 percentage point, the FRP will increase by INR 1.46/quintal. Besides the cyclical downturn that may have set in leading to a decline in crop output, deficient rainfall in some of the major sugarcane producing states of Maharashtra, Karnataka and Tamil Nadu has also been a contributing factor. Although, sugarcane is essentially an irrigated crop, significant deficiency of rains in the monsoon season can adversely affect planting and production.

SMP/FRP as a Percentage of Value of Sugar - All India

Sugar Season	All India Ex-Mill Sugar Prices (Rs/qlt)	All India Recovery Rate (percent)	Total Sugar Value from 1 Qtl of Cane (Rs/qlt)	SMP/FRP (Rs/qlt)	SMP/FRP at All India Recovery Rate	SMP/FRP as percent of value of sugar
(1)	(2)	(3)	(4)=(2)*(3)	(5)	(6)=(5)*(3)/ Basic Recovery Rate	(7)=(6)*100/(4)
2008-09	2127	10.05	213.76	81.18	90.65	42.41
2009-10	2980	10.20	303.96	129.84	139.41	45.86
2010-11	2659	10.17	270.42	139.12	148.93	55.07
2011-12	3070	10.26	314.98	145.00	156.60	49.72
2012-13	3079	10.05	309.44	170.00	179.84	58.12
2013-14	2747	10.05	276.07	210.00	222.16	80.47
2014-15 (E)	2747	10.05	276.07	220.00	232.74	84.30

Source: Calculated by the Commission based on data from Directorate of Sugar, DFPD
 Note: It has been assumed that the prices would remain at the same level in 2014-15 as that in 2013-14

Sugarcane area planted in Uttar Pradesh, which accounts for roughly 34.60 per cent of India’s total cane area, is likely to decline by over 10 per cent. Despite India’s overall decrease in sugarcane area, led by the decline in Uttar Pradesh, area planted in Maharashtra and Karnataka, which account for about 30 percent of India’s cane area, will marginally



increase. Many traditional sugarcane farmers in Uttar Pradesh are likely to shift some acreage to profitable crops like paddy (aromatic and non-aromatic), vegetables, mint, and sorghum. Over the years, since 2004-05, the cane production in Uttar Pradesh has expanded by 6.89 per cent. Maximum growth in production during the same period has been reported in Maharashtra (262.35 per cent) followed by Bihar (383.03 per cent) and Karnataka (227.17 per cent).

Sugar production in India grew at a trend rate of 3.18 per cent per annum between 2004-05 and 2013-14. In 2013-14, it declined from 26.34 million tonnes in 2011-12 to 25.10 million tonnes. From the table given below, it is evident that, Maharashtra continues to be the leading producer of sugar with 31.13 per cent followed closely by Uttar Pradesh (27.11 per cent), Karnataka (16.82 per cent) and Tamil Nadu (4.72 per cent).

State wise Sugar Production in India

(Lakh MT)

State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14 (P)
Sub-tropical Region	61.80	70.40	105.90	91.90	50.70	61.50	71.50	86.20	93.00	85.10
Uttar Pradesh	49.00	54.60	83.50	73.20	41.50	51.70	57.60	69.60	75.00	66.10
Uttarakhand	3.20	4.10	5.30	4.00	2.20	2.90	3.10	3.30	3.40	3.00
Bihar	2.60	4.10	4.80	3.40	2.20	2.60	3.90	4.50	5.10	6.00
Punjab	3.20	3.80	5.50	5.30	2.40	1.80	3.00	3.90	4.40	4.70
Haryana	3.80	3.80	6.80	6.00	2.30	2.50	3.90	4.90	5.10	5.40
Tropical Region	66.10	117.10	172.90	167.60	94.80	125.20	168.30	173.80	154.80	151.60
Maharashtra	21.90	51.70	90.10	90.80	46.00	70.40	90.70	90.00	79.90	75.90
Gujarat	7.90	12.20	13.90	13.70	10.20	11.90	12.70	10.00	11.30	13.60
Andhra Pradesh	11.50	12.50	19.20	13.40	5.90	5.10	10.10	11.40	9.80	9.60
Karnataka	10.80	19.70	25.40	28.40	16.80	25.10	36.40	38.70	34.40	41.00
Tamil Nadu	14.00	21.00	24.20	21.40	16.00	12.70	18.40	23.80	19.30	11.50
Others	2.10	2.10	3.20	3.50	1.20	1.40	3.80	3.50	4.10	7.10
All India	130.00	189.60	282.00	263.00	146.80	188.00	243.50	263.40	251.80	243.80

Source: Directorate of Sugar, Ministry of Consumer Affairs and Food and Public Distribution

In spite of Uttar Pradesh being the largest sugarcane producer, Maharashtra is the leading sugar producer owing to improved cane recovery percentage, which is the determining factor the sugar production. The state wise details of the cane recovery percentage can be seen the table below.

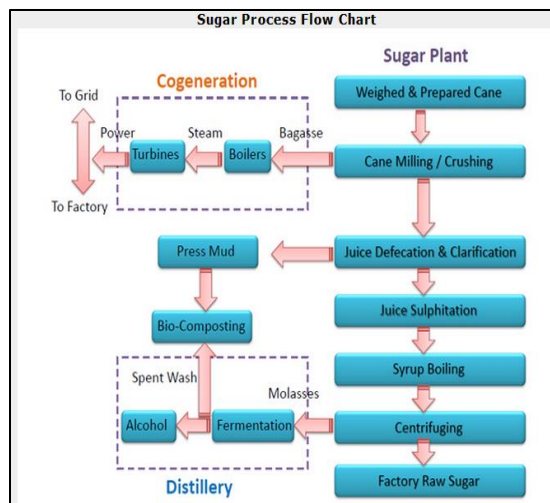
State wise Sugar Recovery Levels in India

State	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13 (P)
Andhra Pradesh	10.3	10.7	10.1	9.7	10.1	9.9	9.3	9.8	9.8	9.6
Bihar	9.3	9.6	9.5	8.7	9.2	9.3	9.5	9.3	9.1	8.9
Gujarat	10.9	10.8	10.8	10.7	10.9	9.5	10.5	10.0	10.6	10.8
Haryana	10.5	10.2	9.8	9.7	9.9	9.1	9.4	9.0	9.1	9.7
Karnataka	10.2	10.1	10.8	10.7	10.1	10.3	10.7	10.9	11.2	10.4
Maharashtra	10.9	11.4	11.7	11.4	11.8	11.5	11.5	11.3	11.7	11.4
Punjab	9.7	9.8	9.2	9.5	9.3	9.3	8.6	8.8	9.1	9.1
Tamil Nadu	9.9	9.6	9.2	9.3	9.3	9.6	8.9	9.1	9.4	9.0
Uttar Pradesh	9.8	9.8	9.5	9.5	9.3	8.9	9.1	9.2	9.1	9.2
Uttarakhand	9.8	9.6	9.4	9.5	9.8	9.2	9.2	9.3	9.1	9.2
All India	10.2	10.2	10.2	10.2	10.3	10.1	10.2	10.2	10.3	10.1

Source: Directorate of Sugar, Ministry of Consumer Affairs and Food and Public Distribution

From the above table it is clear the sugar recovery in Maharashtra is highest and the same in case of Uttar Pradesh stands at the lowest levels. The national recovery levels stands at 10.27 and only 3 states are recovering sugar above it. It has been observed that barring Maharashtra, Karnataka, Gujarat and Bihar the sugar recovery is on continuous decline.

Sugar Manufacturing Process



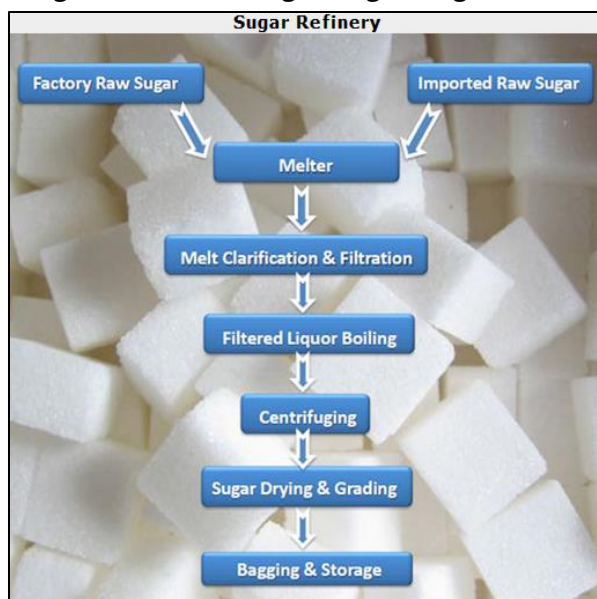
Around 80 per cent of all sugar is derived from sugarcane – a tall bamboo - like grass that grows to a height of 6 m (20 ft) and is largely grown in tropical countries. The remaining 20% comes from sugar beet – a root crop resembling a large parsnip, grown mainly in the temperate zones in the North. In general, the costs of producing sugar from sugar cane are lower than for sugar beet.

Sugar cane is cultivated for its sucrose content and requires lots of sun and water. At the time of harvest, the stems are cut mechanically or by hand and are transported to sugar mills for processing. Processing involves crushing and grinding the stems to extract the cane juice, thickening it into syrup, and

then boiling it. This produces sugar crystals, which is dried before storage. The raw cane sugar is then refined, usually in the consuming country.

Refining is the process of turning the raw sugar into food-grade sugar, such as granulated white and brown sugar, sugar cubes and icing sugar. The largest world markets for sugar are confectionary, bakery products and soft drinks.

By-products derived from sugar cane include rum, molasses (which is used to produce syrups for the food industry), ethanol (motor fuel), bagasse (woody cane fiber used as biofuel for mills, pulp for paper industry and building materials) and filter cake (animal feed and fertilizer).



Major Factors Affecting Indian Sugar Prices

The major factors affecting the Indian sugar price are enlisted in the following table:

Factor	View	Impact on Price
Lower area under sugar cane cultivation	Drop in the cane cultivation area due to draught in Maharashtra and Karnataka has compelled farmers to shift to other crops	↑
Arrears in payments	Arrear in payments to the farmers results in diversion of cane growing areas to other crops resulting in less cane availability for crushing next season and lower production. For 2012-13 season, estimated cumulative cane arrear build up across the country stood at over `100 billion.	↑
Dependence on Monsoon	Being an agricultural commodity, sugar cane is been exposed to adverse weather conditions. Therefore, any significant change in production estimates due to poor monsoons can decrease inventory and increase sugar prices and vice versa.	↑
Increase in sugar consumption	Global sugar consumption is projected to increase at CAGR of 4.6 per cent and reach nearly \$97.2 billion by 2017. Consumption in India, which is major sugar producing nation, is expected to grow in same trajectory.	↑
Government Policy	Risk of government intervention to control the prices to curb inflation and stabilize the sugar prices in the domestic market	↑

Indian sugar consumption in MY 2016-17 is forecast to rise marginally to 27.2 MMT. Post revises consumption estimates for current and previous years as per recent industry estimates. Growing domestic demand from soft drink manufacturers, bakeries, hotels, restaurants, confectionary, and ice-cream manufacturers will support higher consumption. Bulk consumers account for about 65 percent of the total sugar consumption in India. India's relatively stable economy, stable political situation, rising incomes, young population, and changing consumption patterns are key drivers for food consumption. Most khandsari sugar is consumed by local sweet shops and gur is mostly consumed in rural households and for feed use.

International Scenario

In addition to the major domestic factors mentioned in the above discussions, the global cotton scenario also expected to affect the prices in a big way. To measure the exact impetus of the global factors, we can have a close watch at the global cotton balance over the last decade.

Global Sugar Balance

(Million MT)

Marketing Year	Beginning Stocks	Production	Imports	Exports	Total Dom. Cons.	Ending Stocks
2000-01	37.43	130.76	40.37	38.32	130.09	39.86
2001-02	39.86	134.40	39.69	42.33	134.34	36.63
2002-03	36.63	148.55	41.70	47.21	138.03	40.59
2003-04	40.59	142.49	41.26	46.54	138.95	38.06
2004-05	38.06	140.73	45.48	46.95	141.65	34.74
2005-06	34.74	144.30	44.72	49.53	143.04	30.47
2006-07	30.47	164.28	44.14	50.76	149.37	36.74
2007-08	36.74	163.26	44.96	50.63	150.88	43.08
2008-09	43.08	143.83	42.33	44.96	153.85	29.84
2009-10	29.84	153.18	48.26	48.33	154.15	28.03
2010-11	28.03	162.22	49.12	53.94	155.27	29.49
2011-12	29.49	172.35	48.56	54.99	159.60	35.19
2012-13	35.19	177.96	51.88	55.69	165.66	42.52
2013-14	42.52	176.10	51.35	57.88	166.96	43.93
2014-15	43.93	177.22	50.88	55.03	170.44	45.76
2015-16	45.76	164.92	54.44	54.87	171.80	37.76
2016-17	37.76	169.33	55.62	55.63	173.64	32.83

Source: Foreign Agricultural Service

From the above table we can see that the global production over the years have shown gradual improvement. It showed an increase of about 29.49 per cent over 2000-01. Likewise, the import, consumption and export grew by 37.76 per cent, 33.48 per cent and 45.20 per cent respectively. The positive fact about the sugar is the steady growth in the consumption and production. If this rate of consumption (as compared to production) continues in the coming years, the prices are bound to maintain a steady positive trend and would be adequately supported by the decreasing ending stock. The continued weather abnormalities in form of developing El Nino and prospects of declining production in major sugarcane producing countries is going to support the prices.

The country wise analysis of global supply and demand reveals that Brazil and India are the two major players in the global market producing about 36.95 per cent of global production. Other countries with significant production are Thailand (5.96 per cent), China (4.86 per cent), United States (4.67 per cent) and Mexico (3.82 per cent). Though India ranks 2nd in terms of production, it is the largest consumer of sugar with global share of 15.66 per cent. Other major consumers of sugar are China (10.25 per cent), Brazil (6.22 per cent) and United States (6.31 per cent).

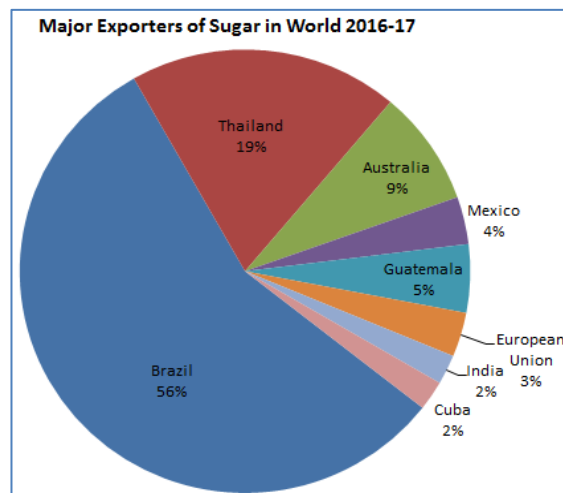
World Production Domestic Consumption and Ending Stocks

(Million MT)

Countries	2011/12	2012/13	2013/14	2014/15	2015/16	May 2016/17
Production						
Brazil	36150	38600	37800	35950	34650	37070
India	28620	27337	26605	30460	27700	25500
European Union	18320	16655	16020	18449	14000	16500
Thailand	10235	10024	11333	10793	9740	10100
China	12341	14001	14263	11000	8430	8230
United States	7700	8148	7676	7853	8104	7902
Mexico	5351	7393	6382	6344	6555	6466
Pakistan	4520	5000	5630	5164	5085	5365
Russia	5545	5000	4400	4350	5200	5320
Australia	3683	4250	4380	4700	5000	5000
Others	39884	41550	41612	42161	40459	41878
Total	172349	177958	176101	177224	164923	169331
Human Dom. Consumption						
India	24180	25588	26023	26500	26800	27200
European Union	18200	18250	18500	18700	18800	18800
China	14200	15100	16445	17558	17500	17800
United States	10106	10421	10722	10785	10887	10959
Brazil	11500	11200	11260	11400	10900	10800
Russia	5700	5700	5400	5700	5800	5880
Indonesia	5050	5400	5450	5500	5600	5700
Pakistan	4300	4400	4500	4600	4700	4800
Mexico	4384	4544	4184	4638	4591	4661
Egypt	2850	2840	2870	2900	2930	2950
Others	59127	62219	61607	62158	63291	64087
Total	159597	165662	166961	170439	171799	173637
Ending Stocks						
India	7163	9373	8227	10607	9707	8007
China	4140	6793	8832	7287	4872	3157
Thailand	2810	3616	5254	5263	3603	2053
Pakistan	1350	859	1270	1270	1395	1975
United States	1795	1958	1642	1647	1581	1503
Mexico	1024	1548	881	860	1440	1379
European Union	3303	3836	3066	4068	1268	968
Philippines	932	942	1032	997	947	897
Iran	640	700	700	300	500	590
Japan	543	550	560	584	580	580
Others	11490	12346	12464	12879	11870	11719
Total	35190	42521	43928	45762	37763	32828

Source: Foreign Agricultural Service

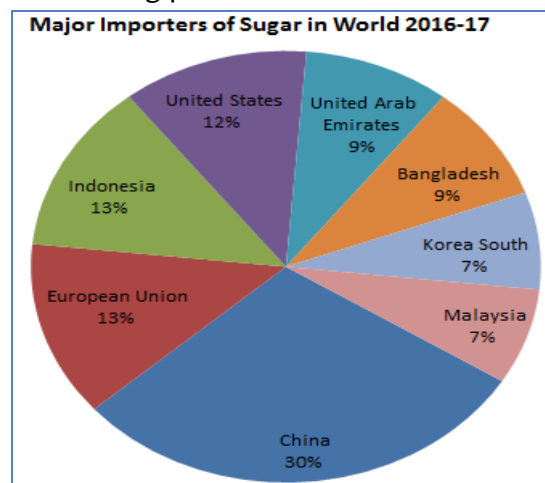
Global sugar consumption has continued to increase despite the continuing economic difficulties in many developed countries, compounded by the period of high sugar prices and increased volatility. This has slowed sugar use at the start of the Outlook period and slower consumption growth is expected to continue over the longer term as world sugar prices average higher in real terms. Global consumption is projected to grow at 2.2% p.a. to 2020-21, and down from 2.6% p.a. in the previous ten years. The developing countries will continue to experience the strongest growth in sugar consumption, fuelled by rising incomes and populations, although with considerable variation between countries. The sugar deficit regions of Asia and the Far East as well as Africa, will be responsible for most of the expansion in use. In contrast, sugar consumption in many developed countries, with their mature sugar markets, are expected to show little or no growth. Total consumption in these countries is expected to increase from 48 Mt to nearly 52 Mt over the projection period. This reflects, among other things, slowing population growth and dietary shifts that are underway as a result of increasing health awareness and concerns with obesity and related health issues.



Global consumption for 2016-17 is forecast at a record 174 million MT (raw value), exceeding production and drawing stocks down to the lowest level since 2010/11. Production is up 4 million MT to 169 million as gains in Brazil and the European Union more than offset a decline in India. With growing demand, imports are forecast up 1.2 million MT. The rising pace of global consumption has been sustained by drawing down stock levels in recent years. Consequently, stocks are approaching what appear to be historically low levels. In fact, world raw sugar prices, after falling for over a year and bottoming at less than 11 cents per pound in August 2015, are trending higher to near 17 cents in May 2016. As prices react to high demand and as the Brazilian real struggles to find equilibrium against the dollar, market returns are needed to provide incentives for producers to catch up with demand.

Highlights of Development in Major Countries

Over the last decade, there have been a number of structural changes affecting the evolution of trade patterns which will continue to influence international sugar transactions in the coming period. These include increased concentration in sugar export trade, with a smaller number of global exporters, and a decline in the volume of white sugar traded internationally. The reform of the sugar regime in the European Union led to an abrupt decline in white sugar exports, of the order of 6-7 Mt, as production quotas were progressively reduced below consumption requirements. As a consequence, the EU has switched from a large net exporter of white sugar to a large importer of mainly raw sugar for further refining and sale in the domestic market. The white sugar trade is expected to recover over the coming years. This will occur as more refined sugar is exported by traditional exporters in response to the high white sugar premium at the start of the Outlook and as new destination refineries in a number of countries in Africa and the Middle East progressively come on stream and begin to export



increasing quantities of white sugar to neighbouring countries and regional markets. The white sugar trade is expected to recover over the coming years. This will occur as more refined sugar is exported by traditional exporters in response to the high white sugar premium at the start of the Outlook and as new destination refineries in a number of countries in Africa and the Middle East progressively come on stream and begin to export increasing quantities of white sugar to neighbouring countries and regional markets.

United States: The production is forecast down 200,000 MT from last year to 7.9 million on projected lower cane yields. Imports are expected to rebound 8 percent to 3.2 million MT with consumption growing slightly. Stocks are projected to dip 5 percent to 1.5 million MT.

Brazil: The production is forecast to rise 2.4 million tons to 37.1 million on favorable weather and a lower percentage of sugarcane being converted to ethanol (forecast at 57 percent compared to 59 percent the year before). Brazil remains the largest producer and exporter of sugar with exports projected up 1.8 million tons to 26.1 million on steady higher demand and greater exportable supplies. Consumption is down slightly on lower consumer purchases of processed foods.

Thailand: The production is forecast to increase 360,000 MT to 10.1 million as an uptick in area offsets lower yields affected by drought. Higher demand is driving exports up 2 percent to a record 9.0 million MT while stocks are drawn down. Consumption continues to trend higher on growing household and industrial uses.

Australia: The sugar production and consumption is projected to be flat at 5.0 million and 1.2 million tons, respectively. Exports are forecast higher at 3.9 million tons as trade agreements have increased access to markets such as South Korea.

Guatemala: s production is forecast to reach a record 3.1 million tons on improved yields and a steady expansion in area. Guatemala continues to export over 70 percent of production with exports up 2 percent to 2.3 million tons. Stocks are expected to decline as consumption continues to climb.

India: The consumption is forecast to rise marginally to a record 27.2 million tons. Production is forecast to drop 2.2 million tons to 25.5 million due to lower area and yield. Drought conditions encouraged farmers to keep existing cane in production longer rather than planting new cane. With higher consumption and lower production, stocks are expected to be down 18 percent

Pakistan: The production is forecast up 280,000 tons to 5.4 million reflecting growth in area. Consumption and stocks both are expected to increase with higher demand and increased production.

European Union: Production in the European Union is forecast to rebound 2.5 million tons to 16.5 million on higher sugar beet area and yield. Consumption and imports are projected flat at 18.8 million and 3.5 million tons,

Global Trends in Sugar Trade (Million MT)						
Country	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Exports						
Brazil	24.65	27.65	26.20	23.95	24.35	26.10
Thailand	7.90	6.69	7.20	8.25	8.80	9.00
Australia	2.80	3.10	3.24	3.56	3.65	3.90
Mexico	0.99	2.09	2.66	1.55	1.19	1.61
Guatemala	1.62	1.91	2.10	2.34	2.26	2.31
European Union	2.34	1.66	1.55	1.66	1.50	1.50
India	3.76	1.26	2.81	2.58	2.90	1.00
Cuba	0.83	0.78	0.94	0.90	0.95	1.00
Other	10.11	10.55	11.18	10.25	9.28	9.22
Total	54.99	55.69	57.88	55.03	54.87	55.63
Imports						
China	4.43	3.80	4.28	5.06	6.70	7.90
European Union	3.55	3.79	3.26	2.92	3.50	3.50
Indonesia	3.03	3.57	3.57	3.05	3.27	3.40
United States	3.29	2.93	3.40	3.22	2.93	3.16
United Arab Emirates	2.15	2.58	2.11	2.37	2.46	2.48
Bangladesh	1.70	1.55	2.08	1.98	2.35	2.35
Korea South	1.67	1.81	1.91	1.88	1.91	1.94
Malaysia	1.72	1.97	1.90	2.06	1.93	1.92
Others	27.02	29.89	28.86	28.35	29.39	28.98
Total	48.56	51.88	51.35	50.88	54.44	55.62

Source: Foreign Agricultural Service

respectively. Exports are unchanged at 1.5 million tons, limited by the World Trade Organization sugar export ceiling.

China: The consumption, projected at a record 17.8 million MT, continues to trend higher bringing stocks down to 3.2 million. Production is forecast to decline to 8.2 million MT on lower area. Over the last couple of years, higher land and labor costs and the cancelation of minimum purchase prices in Yunnan, Guangdong, and Hainan provinces have resulted in growers switching to other crops such as tobacco and bananas. Imports are forecast at a record 7.9 million MT.

Russia: The production is expected to climb 120,000 tons to 5.3 million MT on both higher area and yield. Consumption is expected to continue to rise due to expansion in homemade jams and preserves, as well as production of home-made alcohol. Imports are boosted 50,000 MT to 750,000 MT.

Mexico: The production is forecast slightly lower at 6.5 million tons while exports are forecast to increase over one-third to 1.6 million tons due to the projected Countervailing Duty Suspension Agreement Export Limit increase. With lower production and higher exports, stocks are expected down just slightly as consumption is little changed.

Indonesia: Production in Indonesia is forecast at 2.2 million tons, 175,000 tons higher due to additional area. Imports and consumption are expected to rise in line with higher demand from the food and beverage industry.

India's Global Trade Scenario

India is likely to be a net sugar exporter in MY 2016-17, assuming normal market conditions, with India forecast to export 1 MMT of (mostly white) sugar. Imports are estimated to be negligible. Current-year sugar exports are estimated at 3 MMT. Total exports will be comprised of 1.8 MMT of white sugar, 100,000 MT of raw sugar, both under open general licenses (OGL), and 1 MMT of refined sugar re-exported under the Advance License Scheme (ALS). Presently, raw sugar exports are not viable. Recent strengthening in domestic sugar prices will encourage mills to sell locally, which will drag on export sales. International sugar prices have strengthened, but more slowly, keeping Indian sugar export sales less competitive. NOTE: Under the ALS, local sugar mills are allowed to import raw sugar at zero duty against a future export commitment.

Myanmar, Somalia, Nepal, Sudan, Sri Lanka, Saudi Arabia, Kenya, Vietnam, UAE, Turkey and Tanzania are among the key markets for Indian sugar this year. Indian sugar exporters prefer Southeast Asia, Asia, Africa and Middle East markets due to lower shipping cost and expanding demand. Imports are estimated upwards of a million tons (mostly raw sugar) but under ALS. In MY 2014/15, India exported close to 2.6 MMT of sugar. Of total exports, 1 MMT is estimated to be crystal white sugar, with another million tons as refined sugar re-exported under the ALS. Further, about 500,000 MT are believed to be raw sugar exports, permitted under export subsidy program for MY 2014/15.

Trade Policy

Imports: On April 29, 2015, the Union Cabinet approved to increase the duty on sugar imports under the OGL from 25 to 40 percent. The objective of increasing the tariff was to discourage imports, prevent excessive inventory, and support local sugar prices. On August 21, 2014, the Government of India (GOI) raised its tariff for refined and raw sugar from 15 to 25 percent.

Exports: Sugar can be exported under the OGL. According to the Ministry of Commerce's Notification No 3/2015-2020, shippers are no longer required to register sugar quantities prior to exporting with the Director General of

Foreign Trade (DGFT) in an effort to expedite export sales. India's export subsidy scheme for raw sugar exports, which had been implemented during the last two marketing years, lapsed in September 2015 as it did not yield sales in terms of volume.

On September 18, 2015, GOI introduced the minimum indicative export quota (MIEQ) for selling 4 MMT of sugar (raw, white/refined) in MY 2015/16. The export quota has been prorated among sugar factories by considering their average sugar production in last three marketing years. The program seeks to revive sugar exports, inject cash flows and offset surplus sugar in MY 2015/16. However, given the water shortages (for irrigation and drinking) in parts of Maharashtra and Karnataka, many sugar mills will find difficult to meet the prescribed sugar export quota. As a result, mills expect their quotas to be reallocated or relaxed.

Problem in Domestic Sugar Industry

Recently, the Central Government has notified a Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU-2014) in January, 2014 which envisages interest free loans amounting to Rs. 6,600 crore by banks as additional working capital to sugar mills for clearance of cane price arrears. Out of this, Rs. 5,472 crore has already been released by the first week of August, 2014.

State wise cane price arrears for sugar season 2015-16 are as follows:-

Name of State	Dues at FRP (in Rs./cr.)
Bihar	143
Punjab	28
Uttrakhand	198
Uttar Pradesh	2428
Andhra Pradesh	181
Telangana	99
Gujarat	255
Maharashtra	883
Karnataka	1325
Tamil Nadu	610
Puducherry	11
Chhattisgarh	15
Odisha	32
Madhya Pradesh	16
Goa	1
Total dues	6225

An additional grant of interest-free loans of Rs. 4,400 crore to factories for settlement of cane dues was announced in June, 2014. To encourage sugar factories to export raw sugar, in view of high sugar inventories, a scheme was notified in February, 2014 which allows incentives for marketing and promotion services for raw sugar production targeted for export markets for 4 million tonnes during the 2013-14 and the 2014-15 sugar seasons from Sugar Development Fund (SDF). This export incentive has been extended till September, 2014. An increased provision for blending of a cane by-product viz. ethanol with petrol from 5 percent to 10 percent has also been made. These measures have been announced with a view to raise demand for sugar and sugar products and to increase the liquidity of the sugar mills so that they can clear the cane dues. Sugarcane price arrears for sugar season 2015-16 have come down to Rs. 6,225 crore. As on 8.06.2016, about 87% cane dues have been paid for the season. During the corresponding period of last year these dues were Rs. 19,437 crore.

Latest Update:

- Based on the satellite images procured in the latter part of July 2016, the total acreage under sugarcane in the country is estimated to be around 49.91 lakh hectares in 2016-17 SS, which is 5.5% lower to 2015-16 sugar season’s cane area of around 52.84 lac ha.
- Uttar Pradesh, the leading sugarcane producing State in the country, is estimated to have a slightly higher area under sugarcane at 23.35 lakh hectares, as against 23.02 lac ha. last year. ISMA is expecting a better yield in 2016-17 SS due to a substantial increase in area under the high yielding cane variety CO0238. That will increase the sugarcane production and availability for crushing by sugar mills. Further, unlike Maharashtra and North Karnataka, the weather has been good in U.P. with adequate rainfall. Thus, sugar production in U.P. in 2016-17 SS is estimated to be around 75.40 lakh MT, which was 68.22 lac MT in 2015-16 SS.
- The other major sugar producing State, viz. Maharashtra’s cane area has declined in 2016-17 SS, which is mainly due to drought like situation last year, poor rainfall and lesser water availability for irrigation. As against the cane area of 10.5 lac ha in 2015-16 SS, area is expected to come down to 7.80 lac. Ha in 2016-17. Sugar production is, therefore, estimated to be around 61.5 lac MT in 2016-17 SS as against 84.08 lac MT produced in 2015-16 SS.
- Similar to Maharashtra, due to lesser rainfall and drought like situation, sugarcane area in Karnataka has also declined in 2016-17. Area under sugarcane in 2016-17 SS is expected to be about 4.15 lac Ha as against 5.10 lac ha. in 2015-16 SS. Sugar production in 2016-17 SS is estimated to be around 32.2 lac MT, as against 40.71 lac MT expected to be produced in 2015-16 SS.
- Sugarcane area in Tamil Nadu in 2016-17 SS has increased to 2.65 lac ha as against 2.50 lac ha. in 2015-16 SS. Due to better rainfall and expected improvement in yield, sugarcane production will also increase, resulting in better sugar production of 15.6 lac MT in 2016-17 SS as against 13.93 lac MT produced in 2015-16 SS.
- From the beginning of the current 2015-16 season and till 30th April 2016, sugar mills have produced 246.03 lac MT of sugar, down 11% as compared to 276.04 lac MT produced in 2014-15 SS at the same corresponding period.

Comparison between FRP and SAP – Major sugar producing states

Sugar Season	FRP (Rs. per quintal @ 9.5% Recovery)	UP SAP (Rs. per quintal @ Normal Variety)	Karnataka (Rs. per quintal)	Tamil Nadu SAP (Rs. per quintal @ 9.5% Recovery)	Maharashtra (FRP)
2010-11	139.12	205	180	190	200 (first advance)
2011-12	145	240	200	200	180-205
2012-13	170	280	200-240	225	210-250
2013-14	210	280	250	255	236-275
2014-15	220	280	220	240	220
2015-16	230	280	230	285	230

Source: Industry data

Latest FRP

In order to ensure that higher sugar recoveries are adequately rewarded and considering variations amongst sugar mills, the FRP is linked to a basic recovery rate of sugar, with a premium payable to farmers for higher recoveries of sugar from sugarcane.

Accordingly, FRP for 2015-16 sugar seasons has been fixed at Rs. 230 per qtl linked to a basic recovery of 9.5% subject to a premium of Rs.2.42 per qtl for every 0.1 percentage point increase above that level. The FRP of sugarcane payable by sugar factories for each sugar season from 2009-10 to 2015-16 is as tabulated below:

Sugar Season	FRP (Rs. per quintal)	Basic Recovery Level
2009-10	129.84	9.50%
2010-11	139.12	9.50%
2011-12	145	9.50%
2012-13	170	9.50%
2013-14	210	9.50%
2014-15	220	9.50%
2015-16	230	9.50%

Department of Food & Public Distribution, GoI

- Sugar crushing operations for 2015-16 SS in most parts of the country have come to an end on 30th April 2016. 48 sugar mills are still continuing their crushing operations as on date, as against 97 sugar mills which were operating on the same date last year. Out of the 48, 35 sugar mills still operating are in Tamil Nadu. The other sugar mills are in Karnataka, Maharashtra and Haryana, which may close in next few days.
- Sugar mills in U.P. have produced 68 lac MT of sugar till 30th April 2016, as compared to 70.42 lac MT produced on corresponding date in 2014-15 SS. Last year, 14 sugar mills were still operating as on 30th April 2015. However, during the current season only one sugar mill is operating on 30th April 2016. During the current sugar season, cane crushed by sugar mills was about 70 lac MT less, as compared to last season and this is the main reason for drop in sugar production, despite higher recovery.
- Maharashtra mills have produced 83.75 lac MT of sugar as on 30th April 2016 with 5 sugar mills still in operation. Last year during the same period, sugar mills in this State had produced 103.47 lac MT with 30 sugar mills in operation.
- In Karnataka, almost all the sugar mills have stopped crushing for the season except a couple of mills. Till 30th April 2016, sugar mills in the State have produced 40.37 lac MT of sugar, compared with 48.06 lac MT produced last season at the corresponding date. In 2014-15 SS, about 17 sugar mills were operating as on 30th April 2015. Few mills in Southern Karnataka will again start their crushing operations in July 2016 and few thousand MT of sugar is likely to be produced in the remaining period of the current sugar season.
- In Tamil Nadu, 35 sugar mills are still operating as on 30th April 2016 and they have produced 10.50 lac MT of sugar, as compared to 9.48 lac MT produced in 2014-15 SS on the same corresponding period, when 23 mills were operating. During the current 2015-16 SS, it is expected that these sugar mills will continue till end of May 2016 and a few mills will again start their special season in July 2016, when a few lac MT of sugar would get produced in Tamil Nadu.
- As regards sugar production in other States, Gujarat has produced 11.60 lac MT, Uttarakhand 2.68 lac MT, Bihar 5.01 lac MT, Punjab 6.35 lac MT, Haryana 5.40 lac MT, Madhya Pradesh & Chhattisgarh 3.67 lac MT, Andhra Pradesh & Telangana 8.10 lac MT. In comparison with last season, except Punjab where sugar production in the current season is 1 lac MT more than last season, other States have produced slightly lower.
- Considering the number of sugar mills which are in operation as on 30th April 2016 and cane availability in these States, sugar production in the current season is expected to be just above 250 lac MT by the end of September 2016. However, with the carry forward of 90.80 lac MT from previous season and estimated domestic consumption of 256 lac MT & exports of 15 lac MT, sugar mills would still have a carryover stocks of 70 lac MT at the end of the current season.

Impact of sugarcane price on cost of production:

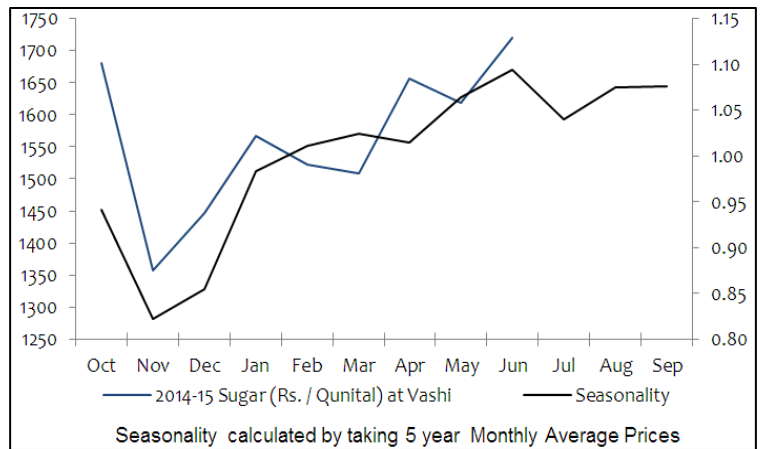
	Recovery %	Cane Required For 1 tonne of Sugar (in tonnes)	Cane Rate (PMT)	Cane Price per Tonne of Sugar
2015-16(*)				
UP	10.60%	9.434	2800	26,415.09
Maharashtra	11.30%	8.850	2733	24,187.05
Karnataka	10.80%	9.259	2615	24,212.85
2014-15				
UP	9.54%	10.482	2800	29,350.10
Maharashtra	11.29%	8.857	2640	23389.00
Karnataka	11.06%	9.046	2561	23166.81
2013-14				
UP	9.26%	10.799	2800	30,237.58
Maharashtra	11.40%	8.772	2522	22124.00
Karnataka	10.95%	9.132	2500	22831.05

(*)Estimates

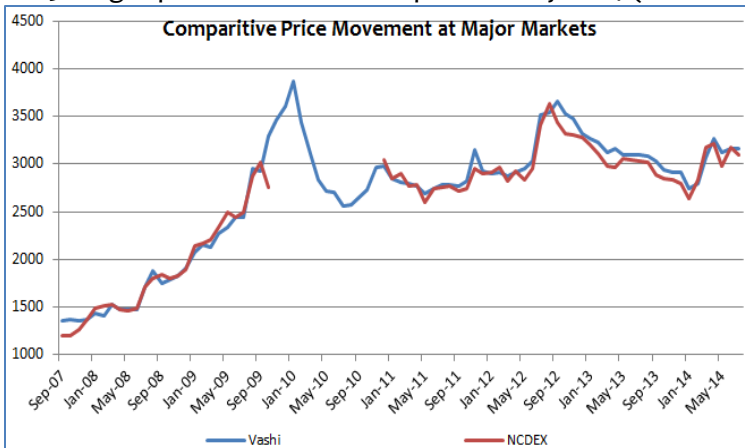
12

Price Trend Analysis

Looking at the seasonal trend in Indian sugar prices, prices tend to rise between Jul-Sep due to the start of the festive demand across India and lean production of sugar providing support to the market. Thereafter we can observe seasonal dip in prices during the months of Oct-Nov as the harvesting of the sugarcane commences across major growing regions, before turning up again during Dec-Jan as the peak festive season demand pushes up the prices. From the month of February prices start falling with sugarcane crushing entering into peak season months and tapering of demand after the culmination of festive season pressurizing the market. This weak trend in prices continues through the month of May-June, as production of Sugar remains high and demand remains low, thus building up of stocks.



Indian sugar prices remained volatile during the period from Nov'04-Nov'06, as the cyclical fall in domestic sugarcane production during 2003-04 and 2004-05 providing support to the sentiment. Although sugarcane production recovered during the year 2005-06, the return of export demand during the year kept the prices on extended positive tone until Nov'06 (prices @ INR 2020/Qtl in Apr'06). Prices have fallen thereafter, with surge in production during 2006/07 and sharply higher cane production in the subsequent year of 2007/08 kept Sugar market under weak tone during Nov'06-Aug'08 (prices @ INR 1370/Qtl in Apr'07). Thereafter, prices have resumed Bull Run, with the hint of sharp decline in Sugarcane production (285 million tonnes vs 348 million tonnes) during 2008/09, along with surge in domestic demand amid the growing economy and announcement of sugarcane bio-ethanol production provided further boost to market. This downtrend in sugarcane production continued in subsequent year (2009/10), which has seen a 277 million MT of sugarcane production vs 285, 348 million MT in preceding two years. Also, the drought conditions in major sugarcane growing areas during 2009/10 initially led an estimated fall to 249 million MT (prices reached to INR 4000/Qtl by Jan'10) and was revised higher as late rains during the season helped in higher production later and pressured the market from Feb'10 onwards. The prices continue to remain in downtrend with sharp increase in acreage during 2010-11. Since then the prices have corrected significantly and it had been hovering in the range of 2600 to 3300 for whole of 2015. Sugar prices reached their peak in July 2014 (due to a poor monsoon) and softened by ten percent a year



later. During this transition sugar mills sold surplus stock in local markets and partially cleared mounting cane arrears. However later, domestic prices gained some strength following the announcement of mandatory sugar exports in MY 2015/16. During the most recent five months, sugar prices rallied by more than 30 percent and should stay firm, given anticipated tighter supplies in the out-year. Gur prices remained strong during most part of MY 2014/15 due to larger than anticipated diversion of canes to sugar mills. However, gur prices have been stable in response to rising cane supplies (Figure 2) and

will remain relatively weak due to increased gur production in MY 2015/16. Currently, Indian wholesale sugar prices range from \$520 to \$550 per MT, while gur is selling at a discount of \$100 per MT to sugar.

Assuming a normal 2016 southwest monsoon and favorable planting conditions, cane planting in MY 2016/17 will reach 4.7 million hectares (MH), a slight decline from the 4.9 MH planted this year. Acute water scarcity and abnormal weather conditions in parts of Maharashtra (Marathwada, Solapur, and Ahmednagar) and northern Karnataka discouraged farmers to bring new areas under production. Rather farmers are choosing to ratoon their crop this year, indicating lower yields. Cane yields in UP are expected to rebound due to increasing use of early-maturing and high-yielding varieties (e.g., Co 0238), which will buoy national yield averages. Nonetheless, out-year yields will decline slightly from the current year. The net decline in planted area and the subsequent dip in production will decrease sugarcane production in MY 2016/17 to 330 MMT, five percent below the current year's estimate. The second advance estimate from the Ministry the Agriculture (Min. Ag) calculates sugarcane production in MY 2015/16 at 346.38 MMT, similar to Post's estimate. Sugarcane area planted is revised up by 34,000 hectares to 4.9 MH, reflecting the latest estimate from Min. Ag. Similarly, the 'final' sugarcane area and production estimates for MY 2014/15 are raised by four and five percent, respectively to 5.1 MH and 362.3 MMT.

Disclaimer:

This report has been prepared by National Bulk Handling Corporation (NBHC) for the sole benefit of the addressee. Neither the report nor any part of the report shall be provided to third parties without the written consent of NBHC. Any third party in possession of the report may not rely on its conclusions without the written consent of NBHC.

NBHC has exercised reasonable care and skill in preparation of this advisory report but has not independently verified information provided by various primary & secondary sources. No other warranty, express or implied, is made in relation to this report. Therefore NBHC assumes no liability for any loss resulting from errors, omissions or misrepresentations made by others.

Any recommendations, opinions and findings stated in this report are based on circumstances and facts as they existed at the time of preparation of this report. Any change in circumstances and facts on which this report is based may adversely affect any recommendations, opinions or findings contained in this report.

© National Bulk Handling Corporation (NBHC) 2014