

World Demand for Edible Oil with special reference to Rice Bran Oil

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World Scenario: Oilseed Production

Commodity	13/14 (Million Ton)	16/17 (Million Ton)
Soybean	280.3	352
Sunflower seed	43.6	48.22
Rapeseed	69.6	63.13
Cotton Seed	44.4	39.52
Groundnuts	28.4	30.32
Palm-kernal & Copra	19.7	20.1
Sesame, Lin & Castor	8.0	8.6
Total	494	562

- Biggest growth has been in Soya
- Sunflower production in Ukraine and Russia could be the next big story
- All other oilseed production has remained more or less stagnant.

Current Year Forecast

Commodity	17/18 (Million Ton)
Soybean	347
Sunflower	47
Rapeseed	65
Cotton Seed	41
Groundnuts	30
Palm-kernal & Copra	22
Sesame, Lin & Castor	9
Total	560

- Overall production looks marginally lower compared to last year.
- In spite of increase in average yield estimates for Soya low.
- World production of Soya may drop by 1% as per USDA.
- Sunflower, Groundnut may remain more or less same.
- Marginal increase in Cottonseed, Sesame, Lin & Castor.

World Soybean Production Growth (Million ton)

Year	US	Brazil	Argentina	Others	Total
2012-13	83	82	49	55	269
2016-17	117	114	58	63	352
2017-18(E)	119	107	57	64	347

- Biggest increase has been in US and Brazil.
- Increasing appetite of China is met by US, Brazil and Argentina.
- Production has grown from 269 mmt to 352 mmt an increase of 31% between 2012-13 and 2016-17.
- Production in India, China & rest of World has practically stagnated.
- USDA estimates US Soya production to rise to 119MMT during 2017-18 as per latest estimates and Brazil to decline 107 MMT.

World Sunflower Production Growth (Million ton)

Year	Argentina	Europe	Russia	Ukraine	Others	Total
2012-13	2.8	7.0	8.0	8.3	13.4	39.5
2016-17	3.5	8.2	11.0	14.0	10.3	47

- Production increase from 2012-13 to 2016-17 is 7.5 million tons or 19% .
- The biggest increase has been in Ukraine and Russia. Marginal increase in Europe. In Ukraine the best returns to farmers is in Sunflower.
- Sunflower production in the world can see increase on strength of competitive pricing.
- IN US, India, China, Turkey etc. it had either stagnated or declined.

World Scenario: Oilseed Production (Key Takeaways)

- Biggest gainers is Soya. Cultivation increased from 269mmt in 2012-13 to 352MMT(2016-17).
- China's growing appetite for both Oil & meal met by US and Latin America.
- Fate of other oilseeds not very encouraging except sunflower.
- Ukraine and Russian sunflower production has improved noticeably and with competitive pricing, gaining acceptance big time in India and China.
- Forecast for 2017-18 as per Oil-World is more or less the same as last year.

World Edible Oil Availability

Production	2012-13 (MMT)	2015-16 (MMT)	2016-17 (MMT)
Coconut Oil	4	3	3
Cottonseed Oil	5	4	4
Olive Oil	2	3	3
Palm Oil	56	59	63
Palm Kernel Oil	7	7	7
Peanut Oil	6	5	6
Rapeseed Oil	25	28	28
Soybean Oil	43	52	54
Sunflower seed Oil	13	15	17
Total	161	177	186

- Production increased from 161 MMT to 186 MMT (16%) between 2012 to 2017
- This increase is largely contributed by Soya & Palm.

Palm Production 2012-13 to 2016-17

Year	Malaysia	Indonesia	Thailand	Others	Total
2012-13	19.3	28.3	2.0	6.7	56.3
2016-17	18.7	32.5	1.8	7.6	60.63

- Malaysian Production has stagnated.
- Indonesian Production has increased sharply.
- 2016 was El Nino affected year and production suffered massively.
- India's appetite for Oil is being met by Palm in large measure.

Palm Production Forecast 2017-18

Country	Production (MMT)
Malaysia	19.85
Indonesia	35.0
Others	12.0
Total	67

- Global Production estimated to increase by 6%.
- El Nino effect is over and production is rebounding. Yields expected to improve.
- Largest increase expected in Indonesia.
- According to latest estimates Malaysian production may cross 20MMT and Indonesian 36MMT.

Bio Diesel Production

Year	Europe	USA	Argentina	Brazil	Indonesia	Thailand	Others	Total
2013	10.65	4.72	2.0	2.56	2.6	0.93	4.5	27.87
2016	11.88	5.25	2.05	3.6	2.4	1.06	4.43	30.67

- Biggest consumer is Europe followed by US.
- Biodiesel Production increased worldwide only 2.8MMT between 2013 and 2016(about 10%.)
- With low Crude price is it only govt. mandates which is ensuring production.
- Discretionary Production is dead.

World Oil Availability (Key Takeaways)

- Palm leads the way as the biggest contributor to world demand followed by Soya oil and Rapeseed Oil.
- Indonesia and to a certain extent Malaysia have helped satisfy growing Indian and Chinese appetite.
- Oil-World estimates during 2017-18 production of all oils combined would rise by around 3.5% or around 6.5MMT.
- Most of the increase would be contributed by rise in Soya and Palm oil productions.
- Biodiesel production may remain stagnant.

World Oil Demand & Supply

	2016-17	2015-16
Opening Stock	20	24
Production	186	177
Total Supplies	206	201
Consumption	184	178
Ending Stocks	19	20

- Total supplies have increased but ending stocks could be marginally low or same.

World Oil Demand & Supply (Key Takeaways)

- We do not anticipate any rise in prices.
- World availability of oils is expected to rise 2.5%.
- World consumption increase is estimated at 3%.
- Ending stocks expected to reduce by 1MMT or remain same.

Indian Oilseed Sector 2016-17

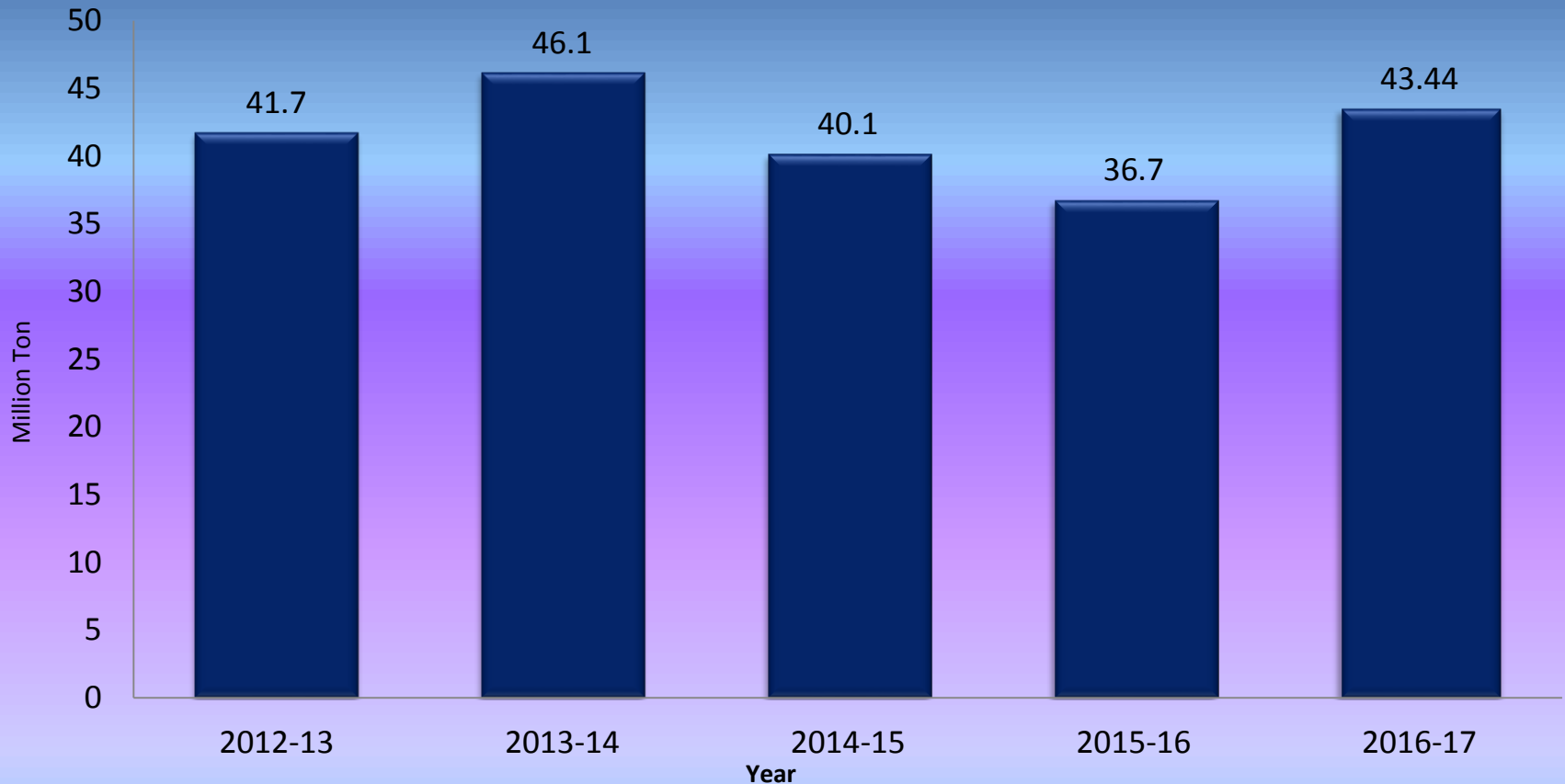
(At a Glance)

Area Under Oilseed Cultivation	28.2 Million Hectare
Average Yield	960 kg
Output of 9 Cultivated Oilseeds*	27.1 Million Ton
Output of Cottonseed & Copra*	11.5 Million Ton
	<u>Total 38.6 Million Ton</u>
Production of Oilcake/Meal	27.4 Million Ton
Production Edible & Non-edible Veg. Oils	7.6 Million Ton
Demand of Veg. Oils (Edible)	21.8 Million Ton
Import of Veg. Oil 2016-17 (Edible)	14.5 Million Ton
Per capita consumption	17 Kg

The Overall turn over of the oilseed sector is Rs.175,000 Crores (28 Billion) and on import front, its 3rd item after Crude Petroleum and Gold. India spending over Rs.70,000 crores (11/12 bln.\$) for import of edible oils per annum and dependence on import is nearly 70%.

* Trade Estimates

Indian Oilseed Production



- Production has stagnated over the years.
- Indian farmers are disillusioned with oilseed cultivation. Kharif planting very low.

Edible Oil Consumption in India (Oil wise)

Particulars	2001-02		2007-08		2015-16	
	Qty	%	Qty	%	Qty	%
Palm Oil	2944	29.08	4437	35.81	9685	45.41
Soy Oil	2258	22.30	2170	17.51	4872	22.84
Mustard Oil	1721	17.00	1814	14.64	1938	9.09
Sunflower Oil	309	3.05	539	4.35	1541	7.22
Cotton Oil	443	4.38	1070	8.64	1267	5.94
Groundnut Oil	1216	12.01	689	5.56	239	1.12
RBO	430	4.25	770	6.21	930	4.36
Others	804	7.94	901	7.27	858	4.02
Total	10125	100%	12390	100%	21330	100%

- Consumption has grown from 10Mln to 22Mln in 16 yrs.(120%)
- Domestic oils now constitute only 30% of total consumption.
- Consumption of Palm oil in India is now nearly 45% of the total consumption followed by Soybean oil and Rapeseed Oil.

Indian Consumption Growth Expectations

Year	Population @ 1.76% Growth	Consumption @ 3% Growth		Consumption @ 4% Growth		Consumption @ 5% Growth	
	In Bn.	Per Capita (In Kg)	MnT	Per Capita (In Kg)	MnT	Per Capita (In Kg)	MnT
2015	1.25	15.2	19.00	15.6	19.5	15.9	19.87
2017	1.28	16.0	20.48	16.8	21.50	17.4	22.27
2019	1.31	17.0	22.27	18.0	23.58	19.1	25.02
2021	1.34	18.0	23.79	19.5	25.70	21.0	27.72
2023	1.38	19.0	25.24	21.1	27.80	23.2	30.56
2025	1.42	20.2	26.78	22.8	30.0	25.6	33.69

- Assuming 4% growth we may require 30MMT by 2025.

Import of Edible Oil-Projection 2016-17

Import Break-Up (MMT)			
Oils	2014-15	2015-16	2016-17
Palm (Edible)	9.54	8.44	8.5
Soybean Oil	2.99	4.23	3.8
Sun Oil	1.54	1.52	1.90
Rapeseed Oil	0.35	0.38	0.30
Safflower Oil	-	0.01(--)	-
Total	14.42	14.57	14.5

- India needs additional over a million tons of edible oil every year to meet the growing requirements.
- Current year imports may be at last year level.

Indian Edible Oil Scenario

(Key Takeaways)

- Exponential increase in consumption driven by rising income levels and aspiration.
- Imports which constituted 3% in late nineties of overall consumption now touch 70%.
- Imports rising almost by 1 million ton per annum.
- Palm constitutes almost 45% of overall consumption.
- Total consumption currently estimated at 22mmt expected to increase to 30mmt by 2025.
- Per capita consumption to rise to about 23kg by 2025.
- Consumption growth likely to be around 4%.
- Palm Oil imports stagnant.
- All incremental demand taken over by soft oils.
- Soya and Sun Oil imports rising with duty advantage to Sun over Soya imports of Sun may rise much more.
- Indian oilseed production stagnating and not likely to grow.

World Rice Production (2016-17)

Country	Production (Million tons)
China	144.8
India	106.5
Indonesia	37.1
Bangladesh	34.5
Vietnam	18.6
Burma	12.4
Philippines	11.5
Brazil	8.1
Japan	7.7
United States	7.1
Others	128
Total	482

- China is the largest Producer. India is 2nd Highest producer.
- Together India and China contribute 50% of total world production.

World-Rice Bran Oil Potential & Production

World Production of Rice	482 MMT
Rice Bran Potential (8% of Rice Production)	38.50 MMT
Rice Bran Oil Potential (17.5 % Recovery)	6.73 MMT
Current Production of Rice Bran Oil	1.50 MMT
World Untapped Potential	5.5 MMT
Percentage of Untapped Potential	80%

- Massive untapped potential . Long way to go.

Country-wise Production of Rice Bran Oil

Country	Production (In tons)
India	950,000
China	200,000
Japan	80,000
Thailand	50,000
Others	220,000
Total	1,500,000

- Chinese production very low.
- India leads the way.
- Indonesia/Bangladesh have to gear up and increase RBO production.

India –Rice Bran Oil Potential & Production

2015-16 Summary

Description	Production (In MMT)
Paddy	155
Rice	106
Rice Bran Potential (6% of Paddy)	9.30
Rice Bran Oil Potential	1.62
Rice Bran Processing	4.85
Rice Bran Oil Production	0.95
Untapped Potential of RBO	0.59

- Untapped potential still high.

Rice Bran Oil

(Key Takeaways)

- China and India contribute 50% of the world rice production.
- Indonesia and Bangladesh also sizable producers of Rice.
- Rice Bran Oil potential not properly exploited by these countries.
- Against potential of 6.73mmt only 1.5mmt production of RBO.
- China has not done much to recover Rice Bran Oil.
- Against potential of 2mmt actual production only 200000.
- Indian efforts relatively better but still lot needs to be done.
- Indian produces 0.95MMT of RBO against potential of 1.6MMT.
- Important that the world is made aware of the huge potential of this oil and untapped 4mmt of RBO is exploited great opportunity.

Challenges & Way Forward

- Major problem in Rice Bran Oil is the rapid deterioration of Oil quality.
 - Modern milling processes help ensuring reduced deterioration of Bran.
 - Extraction plants in proximity to rice mills help in ensuring oil quality.
 - Going forward, large Rice Mills with integrated extraction plants may be the answer to this challenge.
- Another major issue is its relatively high color, especially the red hue.
 - Over the years Indian consumers have started believing that lower color indicates better quality of Oil.
- It is important for us to educate the consumers about health benefits of Rice Bran Oil as well as the fact that high color does not necessarily mean poor quality.
- Rice Bran Oil is the oil of the future. All the Best.

Thank You