

India's Edible Oil Demand & Supply Situation

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PRESENTATION BY:

VIJAY SARDANA

PGDM (IIM-A), M.Sc. (Food Tech.) (CFTRI), B.Sc. (Dairy Tech.), Justice (Harvard),
 PG Dipl. in Int'l Trade Laws & Alternate Dispute Resolution (ADR) (ILI), LL. B (in Progress)
 Specialized in Food & Consumers Laws, IPR & Contract Laws
 Agribusinesses Value Chains, Commodity Markets & Innovation Management

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Common Oilseeds in India



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Demand Projections by author based on various recommended consumption parameters (in million tons)

Category	Production In 2015 (Estimated.)	Demand By 2030 (Projected)	Required Growth in production per year (in Million tons)
Pulses	17.2	40.0	1.52
Coarse Cereals	41.7	102.0	4.02
Wheat	88.9	95.0	0.41
Rice	104.8	156.0	3.41
Oilseeds	26.7	70.0	2.89
Milk	146.3	182.0	2.38
Fish	10.1	16.0	0.39
Egg	39.2	57.0	1.19
Meat	6.0	15.0	0.60
Fruits	86.0	110.0	1.60
Vegetables	167.0	180.0	0.87
Tea	0.9	1.1	0.01
Sugar	25.0	33.0	0.53
Total food Demand	759.8	1057.1	19.82

Please note: Demand for many other items which make part of food system is yet to be estimated.

Source: The POLITIECONOMY, Int'l Research Journal of Political Economy, Volume 3, Issue 1, September 2016, Page 135

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Global Development in Edible oil sector

- **Fastest growth of all sub-sectors of global agriculture:** The oil crops sector has been one of the most dynamic parts of world agriculture in recent decades. In the three decades to 2007 it grew at 4.3 percent p.a. compared with an average of 2.1 percent p.a. for all agriculture, including livestock.
- A major driving force on the demand side for vegetable oils has been their use for non-food purposes
- The strong growth of demand for protein products for animal feed was also a major supporting factor in the buoyancy of the oil crops sector.
- **Trade deficit in Oilseed complex is likely to widen** in India due to rise in consumption because of growth in per capita income and human and livestock population growth.

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World Oilseed Projections

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Global Vegetable Oil Situation till 2025

World Veg. Oil	Unit	Avg. 2013-15	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production	Mt	174.1	180.5	184.2	188.5	192.7	197.1	201.2	205.6	210.1	214.3	218.9
of which palm oil	Mt	61.1	63.3	65.1	66.8	68.4	70.0	71.7	73.4	75.1	76.8	78.6
Consumption	Mt	173.4	181.0	184.1	187.8	192.1	196.7	200.7	204.9	209.4	213.8	218.3
Food	Mt	141.6	147.0	149.4	152.8	156.1	159.4	162.6	166.3	170.2	173.9	178.0
Biofuel	Mt	22.4	23.3	23.5	23.6	24.2	25.1	25.4	25.7	25.8	26.2	26.2
Exports	Mt	74.1	76.7	78.0	79.5	81.3	83.0	84.6	86.4	88.3	90.3	92.1
Closing stocks	Mt	23.7	22.5	22.7	23.3	23.9	24.3	24.8	25.5	26.2	26.7	27.2
Price	USD/t	782.2	736.5	759.8	761.9	777.2	806.0	826.6	826.5	821.1	830.3	834.3

USD 782 per tons means about Rs. 53 per kg

**Global RM Production is likely to increase and
Global RM Prices are likely to remain under pressure**

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Import Price of Edible Oils

(Price in US\$/CIF Indian Port/Ton)

Oils	Feb. 2017	Jan. 2017	Dec. 2016	Nov. 2016	Oct. 2016	Sept. 2016	Aug. 2016	July 2016	June 2016	May 2016	Apr. 2016	Mar. 2016	Feb. 2016
RBD Palmolein	773	788	773	729	709	759	735	643	669	708	739	672	631
Crude Palm Oil	783	794	772	729	704	753	730	642	669	706	738	666	618
Crude Soybean Oil	812	857	887	844	827	803	804	751	768	775	790	749	743
Crude Sunflower Oil	814	824	836	826	834	843	845	848	867	878	864	844	860
FE: 1US\$ = (Average)	66.97	68.04	67.80	67.64	66.74	66.71	66.90	67.15	67.27	66.89	66.42	66.89	68.24

Import price of Crude Soybean Oil: INR 50 to 60 per kg

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Global Soybean Situation till 2025

WORLD SOYBEAN	Unit	Avg. 2013-15	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production	Mt	298.7	318.7	324.5	334.7	342.9	351.3	358.9	367.9	377.6	384.4	393.9
Consumption	Mt	298.8	320.9	326.7	334.9	343.2	351.9	359.0	367.2	376.6	384.0	393.9
Crush	Mt	268.1	289.0	294.5	302.2	310.3	318.8	325.5	333.4	342.3	349.5	359.0
Closing stocks	Mt	34.6	36.2	33.9	33.7	33.5	32.9	32.7	33.4	34.4	34.8	34.8
Price	USD/t	433.3	347.5	370.7	373.5	381.1	390.5	414.2	423.7	416.1	430.0	427.3

USD 433.3 per tons means about Rs. 29 per kg (Soybean, U.S., CIF Rotterdam)

**Global Soya Production is likely to increase and
Global Soya Prices are likely to remain under pressure.**

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Global Rapeseed-Mustard Production & Price Forecast

WORLD RM Seeds	Unit	Avg. 2013-15	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production	Mt	144.5	143.6	145.9	148.0	149.8	151.7	153.6	155.5	157.1	158.9	160.7
Consumption	Mt	143.9	143.4	145.1	147.4	149.5	151.5	153.5	155.7	157.3	159.1	160.7
Crush	Mt	119.6	118.8	120.5	122.6	124.7	126.6	128.6	130.7	132.4	134.2	135.8
Closing stocks	Mt	9.3	8.3	9.0	9.6	9.9	10.1	10.1	10.0	9.7	9.4	9.4
Price	USD/t	444.7	400.5	409.0	391.6	391.0	401.9	412.5	407.2	411.8	422.3	433.1

USD 444.7 per tons means about Rs. 30 per kg (Rapeseed, Europe, CIF Hamburg)

**Global RM Production is likely to increase and
Global RM Prices are likely to remain under pressure.**

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Global Protein Meal Situation till 2025

GLOBAL PROTEIN MEALS	Unit	Avg. 2013-15	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production	Mt	301.1	317.0	322.7	330.6	338.6	346.8	353.6	361.5	369.9	377.0	385.7
Consumption	Mt	298.0	316.9	322.9	330.6	338.5	346.5	353.6	361.2	369.6	376.8	385.6
Closing stocks	Mt	16.0	16.1	15.9	16.0	16.1	16.4	16.4	16.7	16.9	17.1	17.3
Price	USD/t	391.0	289.7	296.9	302.8	312.3	318.0	340.8	350.0	352.1	360.8	368.5

USD 391 per tons means about Rs. 26 per kg

Global Protein Meal Production is likely to increase & Prices are likely to remain under pressure, this will put pressure on livestock sector of India, demand for imported livestock products will go up

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Developments in Edible Oil Sector in India

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Indian Vegetable Oil Industry

Indian vegetable oil industry consists of :

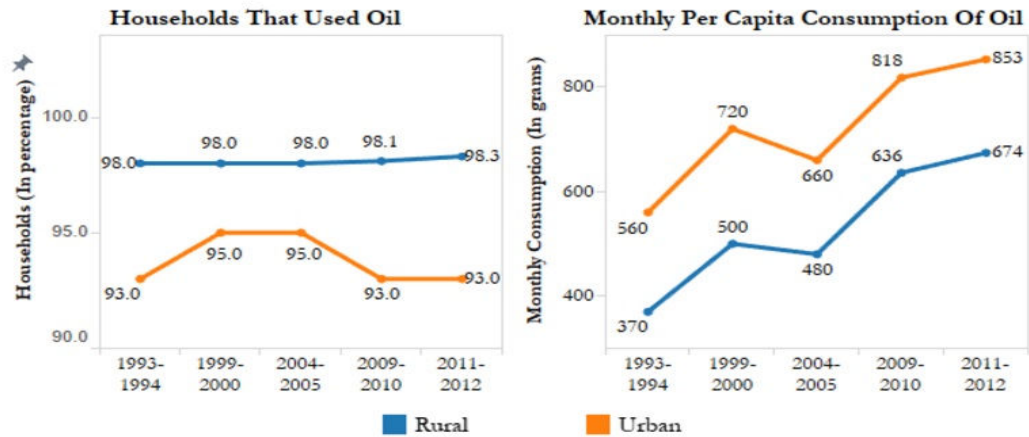
- 15,000 oil mills,
- 600 solvent extraction units,
- 600 vegetable oil refineries and
- 250 Vanaspati units spread across the country crushing / processing oilseeds, oilcakes, rice bran & vegetable oils.
- Domestic turn over of the vegetable oil industry is over Rs.125,000 crores
- Import-export turnover of about Rs.85,000 crores per annum, consisting of
 - Rs.65,000 crores for import of vegetable oils &
 - Rs.20,000 crores for export of oil meals, oilseeds castor oil, groundnut oil & vegetable fats of tree borne oilseeds.

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As Income Going Up, Consumption Going Up

Indians Are Using Increasing Quantities Of Edible Oil



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Production Potential of Oilseeds

Crop	Area (Lakh / Ha)	Recorded Max. Yield (Kg / Ha)	Prod. Potential (mio. Tons)	Oil %	Production (in Mio Tons)
Soybean	104.37	1353	14.12	18	2.54
Mustard & Rapeseed	63.20	1262	7.98	40	3.19
Groundnut	56.28	1764	9.93	45	4.47
Sunflower	8.08	706	0.57	30	0.17
Sesame	22.39	460	1.03	50	0.51
Safflower	2.06	649	0.13	30	0.04
Niger	3.19	333	0.11	40	0.04
Castor	12.51	1624	2.03	35	0.71
Linseed	3.11	502	0.16	50	0.08
Other Oilseeds	0.19	1000	0.02	30	0.01
Total Oilseeds	275.38	1168	32.16	37%	11.76

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Yield Comparison for Various Oilseed Crops (T/Ha)

Oilseed Crop	India Avg. Yield	World Average Yield	Best Yield & Country
Soybean	1.13	2.41	2.80 (Brazil)
Rapeseed	1.11	1.91	3.98 (Germany)
Groundnut /Peanut	1.21	1.58	3.80 (USA)
Sunflower	0.71	1.37	2.42 (France)

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Best Case Scenario for Various Oilseed Crops

Oilseed Crop	India Avg. Area (Lakh Ha)	World Best Yield (Ton/ha)	Expected Crop Output (in mio/tons)	Expected Edible Oil Output (in Mio Tons)
Soybean	10.437	2.80	29.224	5.26
Rapeseed & Mustard	6.32	3.98	25.15	10.06
Groundnut /Peanut	5.628	3.80	21.378	9.62
Sunflower	0.808	2.42	1.955	0.58
Total	23.193		77.707	25.52

Average Case Scenario for Various Oilseed Crops

Oilseed Crop	India Avg. Area (Lakh Ha)	World Best Yield (Ton/ha)	Expected Crop Output (in mio / tons)	Expected Edible Oil Output (in Mio Tons)
Soybean	10.437	2.41	25.15	4.53
Rapeseed & Mustard	6.32	1.91	12.07	4.82
Groundnut / Peanut	5.628	1.58	8.89	4.00
Sunflower	0.808	1.37	1.106	0.33
Total	23.193		47.216	13.68

Estimated Production of Major Cultivated Oilseeds, availability of edible oils from Domestic and Import Sources (in Lakh Tons)

Oil Year (Nov.- Oct.)	Production of Oilseeds*	Net availability of edible oils from all domestic sources	Imports**	Total Availability of Edible Oils
2005-2006	279.79	83.16	40.91	124.07
2006-2007	242.89	73.70	46.05	119.75
2007-2008	297.55	86.54	54.34	140.88
2008-2009	277.19	84.56	74.98	159.54
2009-2010	248.83	79.46	74.64	154.10
2010-2011	324.79	97.82	72.42	170.24
2011-2012	297.98	89.57	99.43	189.00
2012-2013	309.43	92.19	106.05	198.24
2013-2014	328.79	100.80	109.76	210.56
2014-15	266.75	89.78	127.31	217.09

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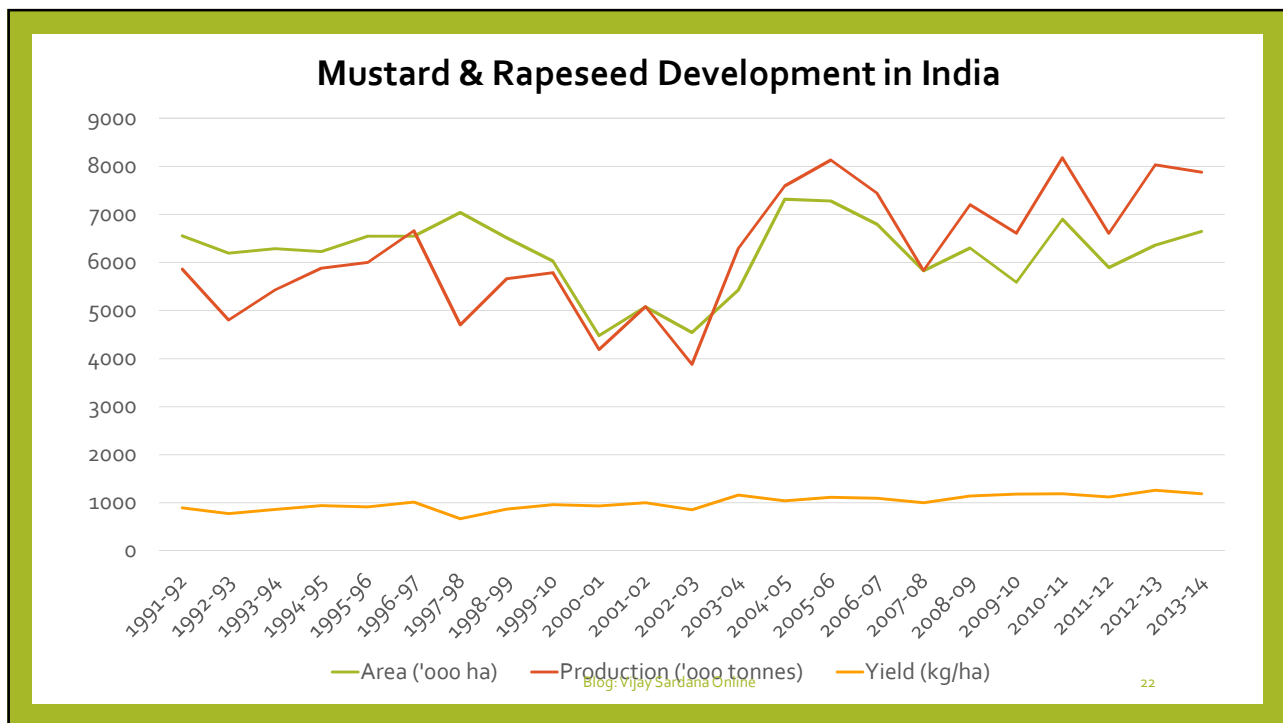
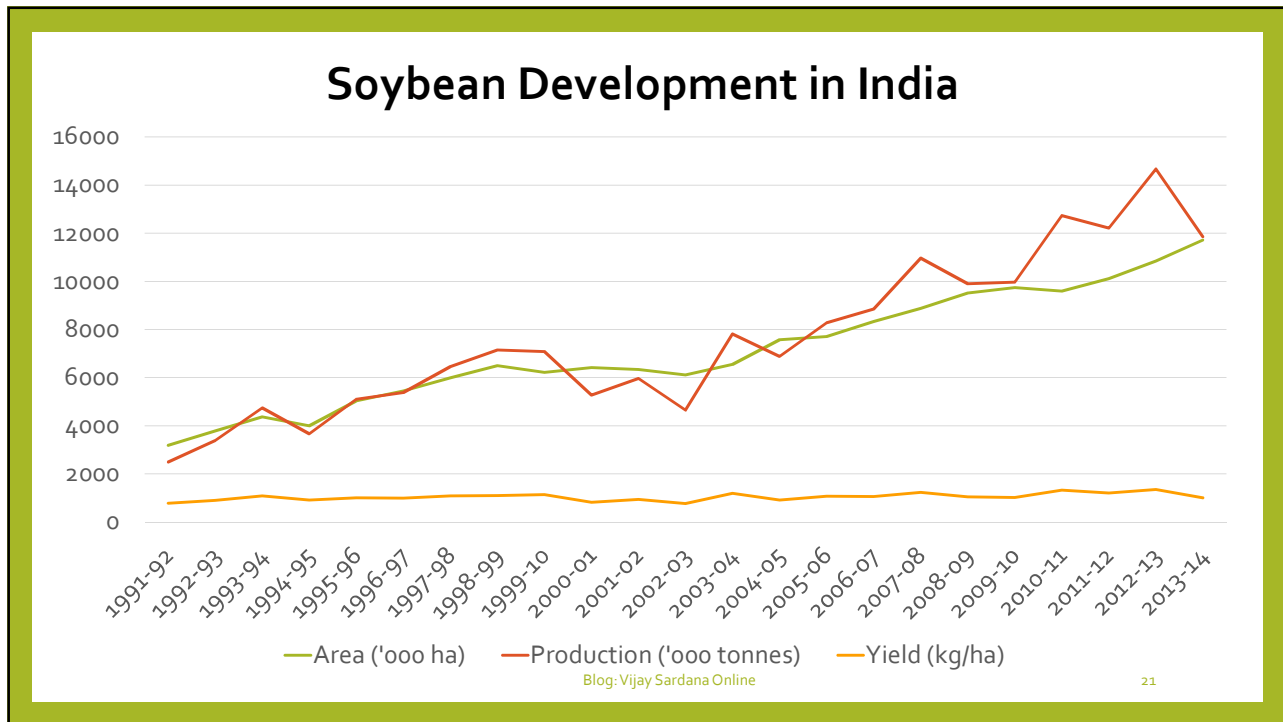
**Import of Oilcake / Meal by India
Apr.'16 to Jan.'17 & For 2015-16**

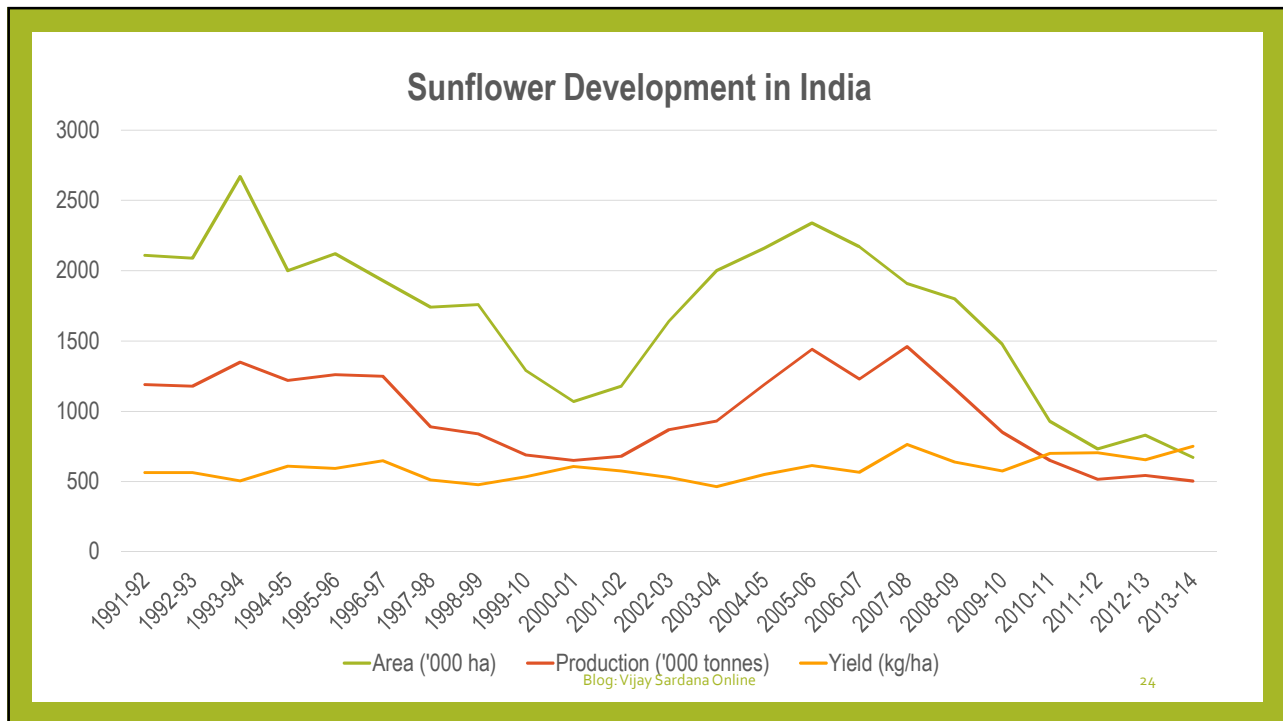
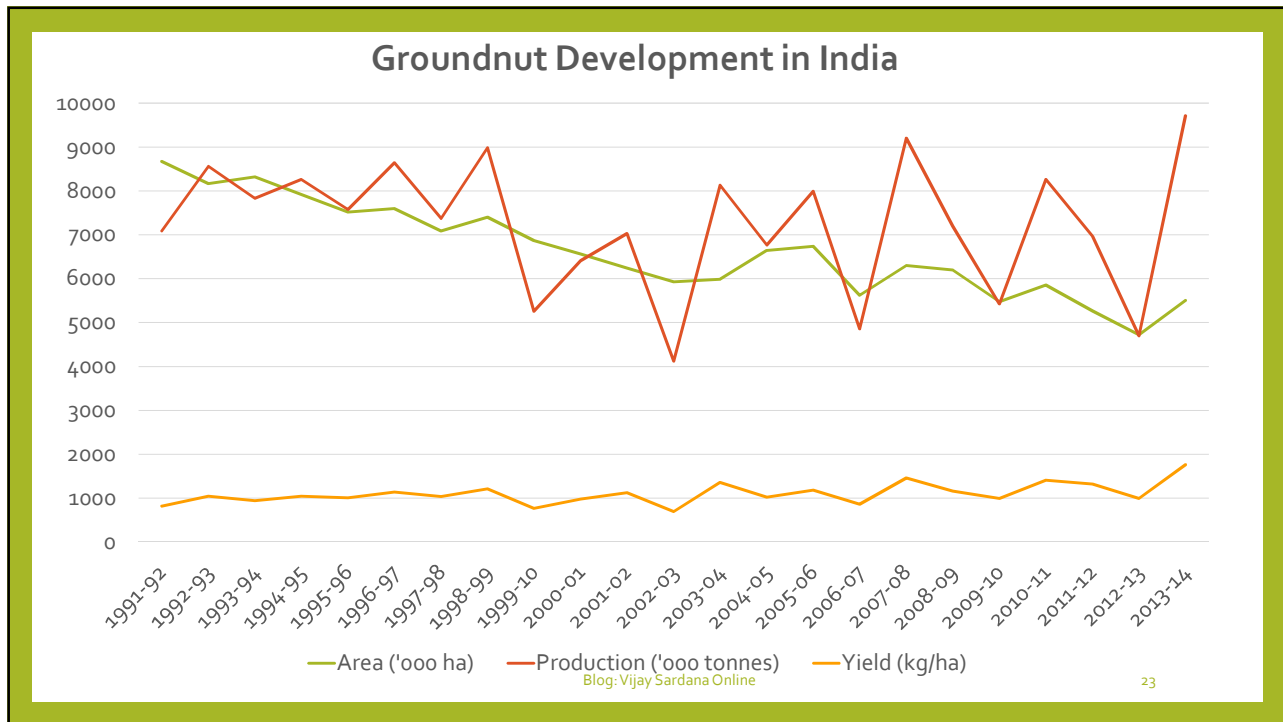
HS Code	Description	Apr.'16 to Jan.'17		2015-16 (Apr.- March)	
		Qty MT	Value Rs. Lacs	Qty MT	Value Rs. Lacs
23021090	Maize Bran – Other by products	249.19	252.32	577.04	390.98
2304	Soybean Extractions				
23040010	Oilcake & Oilcake Meal of Soybean expeller variety	1899.63	743.16	33.19	65.34
23040020	Oilcake of Soybean S.E. (defatted)	4628.00	1388.34	4237.00	1264.64
23040030	Meal of Soybean S.E. (defatted)	3049.15	940.40	135.00	35.64
23040090	Other solid residues of Ext. Soy Oil	24647.61	7095.73	1836.64	540.39
	Sub Total	34224.39	10167.63	6241.83	1906.01
2305	Groundnut Extraction				
230500	Oilcake & other solid residue from Groundnut oil ext.	60.00	8.30	389.00	48.19
230650	Coconut – Oilcake & other residues	127176.64	20682.41	157727.21	24298.63
23062010	Linseed – Oilcake & Oilcake meal of expeller variety	--	--	56.76	8.81
23062020	Linseed – Oilcake & Oilcake meal decorticated S.E. (defatted) variety	130.00	22.33	--	--
	Sub Total	130.00	22.33	56.76	8.81
2306	Sunflowerseed Extractions				
230630	Oilcake & residues of Sunflowerseeds	245283.12	41838.91	49682.95	8647.96
23063010	Oilcake & Oilcake meal of expeller Variety	23691.09	4030.61	8554.23	1536.74
23063020	Oilcake & Oilcake meal of S.E. (defatted)	143909.28	24555.63	35291.49	5994.82
	Sub – Total	412883.49	70425.15	93528.67	16179.52
23069012	Mustard Seed – Oilcake & Oilmeal of expeller variety	25318.32	5349.99	23623.66	4895.97
23069021	Oilcake & Oilcake meal of Mustardseed S.E. Variety (defatted)	3386.01	1344.18	2810.18	1470.49
	Sub – Total	28704.33	6694.17	26433.84	6366.46
23069024	Sesame Seed – Oilcake & Oilmeal of S.E. Variety (defatted)	55.00	10.20	32.00	6.74
23069014	Oilcake & Oilcake Meal of expeller Variety	--	--	--	--
	Sub - Total	55.00	10.20	32.00	6.74
23066000	Palm Nut Kernel – Oilcake & Oth. Residues	10943.58	1201.73	7197.26	808.10
230690	Other Oilcake residues from extraction of other oilseeds	38727.85	7803.48	31536.90	6848.80
23069029	Oilcake & Oilcake Meal of other seeds of S.E. (defatted)	--	--	--	--
2309	Compound Feed				
23099010	Compound Animal Feed	13991.57	27860.37	16639.68	41283.00
23099020	Concentrated for Compound Animal Feed	4230.40	19670.17	4055.46	18554.49
23099031	Prawn and Shrimps Feed	43754.97	30720.90	38662.28	30336.81
	Sub-Total	61976.94	78251.44	59257.42	90174.30
	Grand Total	715131.41	195519.16	382977.93	147034.54

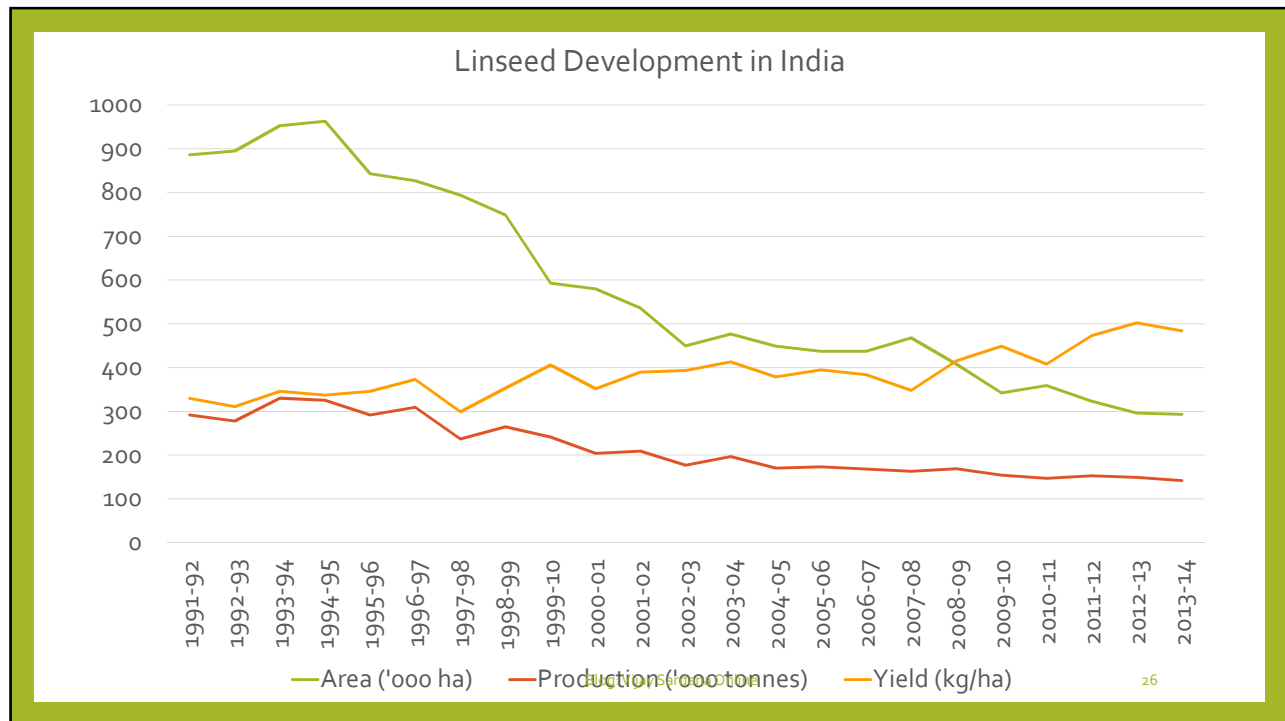
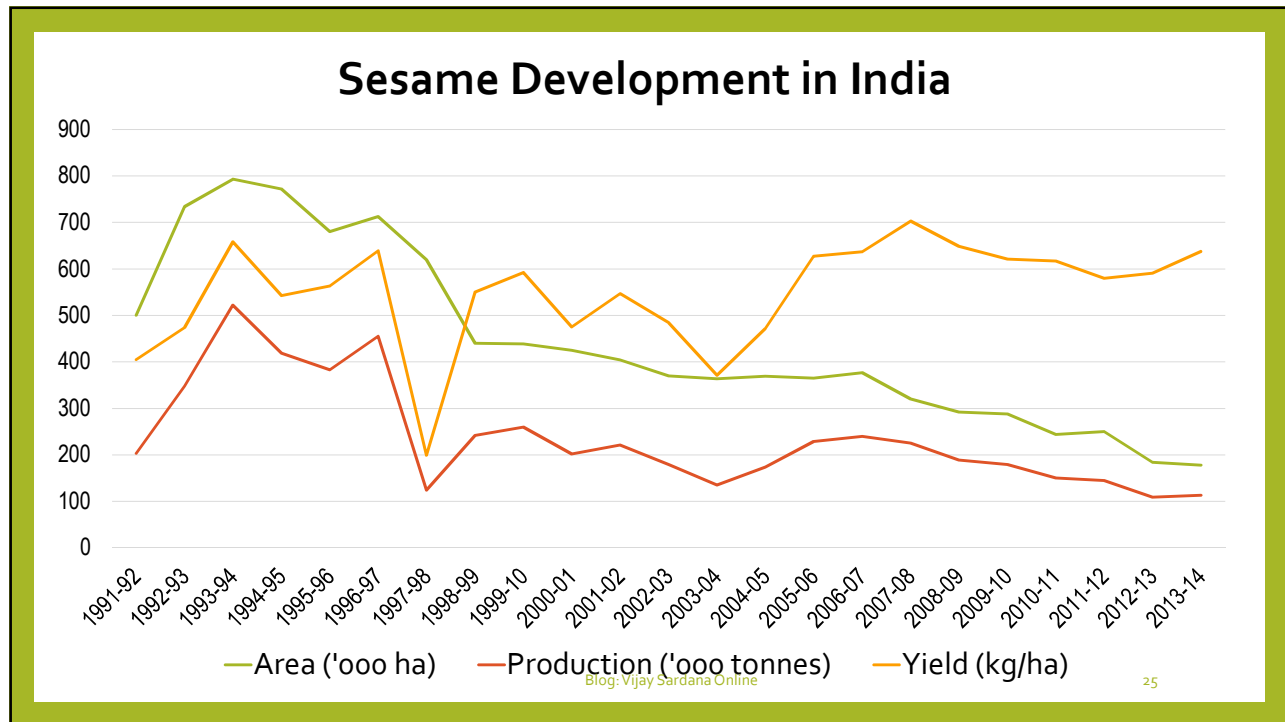
Source : DGFT
Date : 10th April, 2017

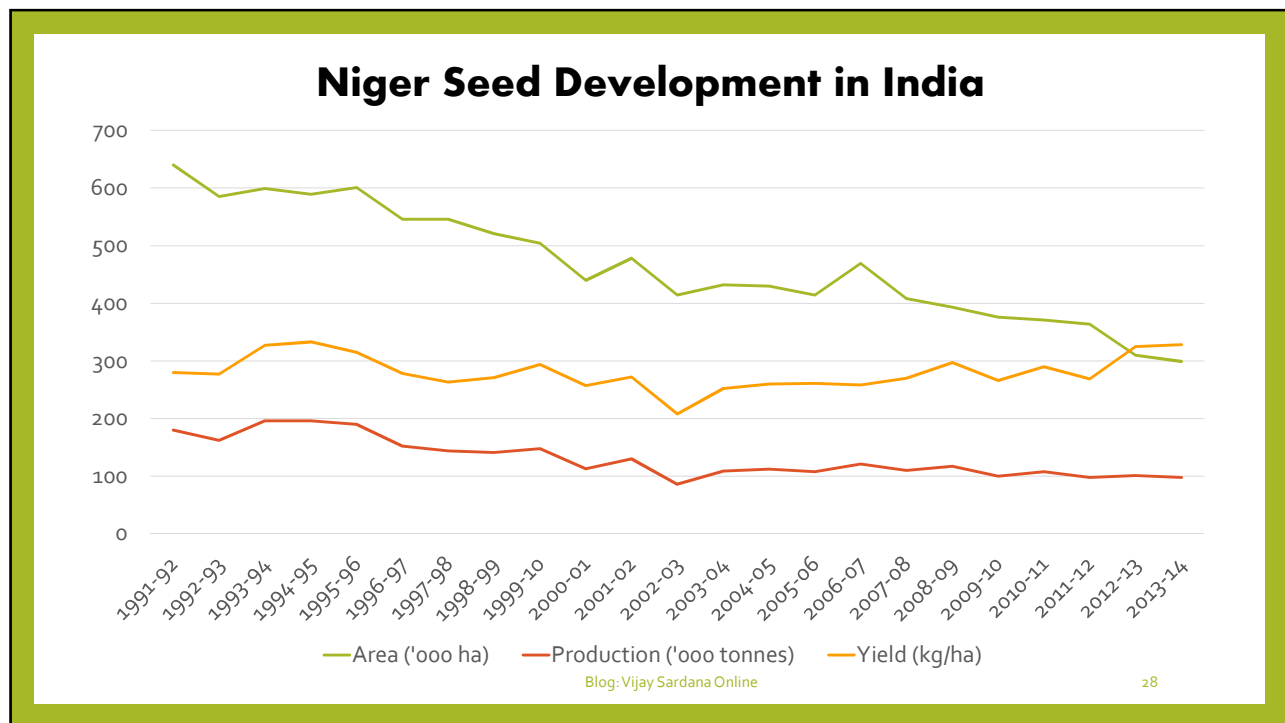
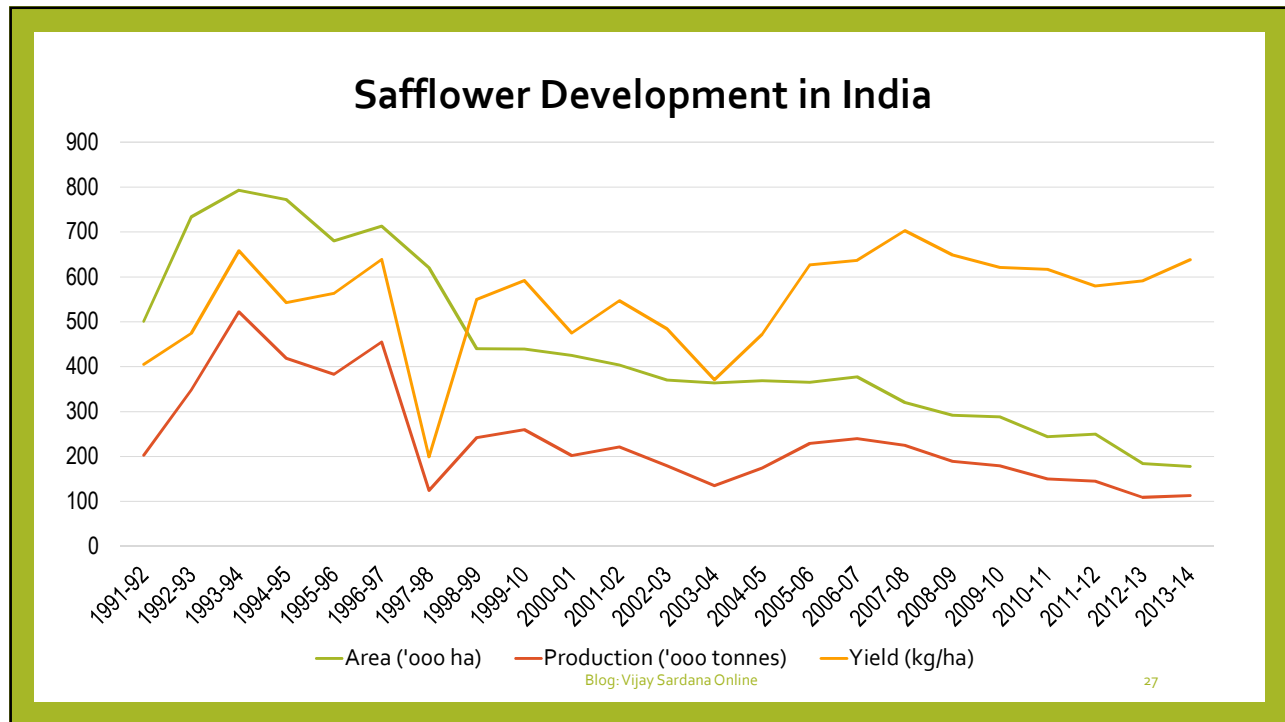
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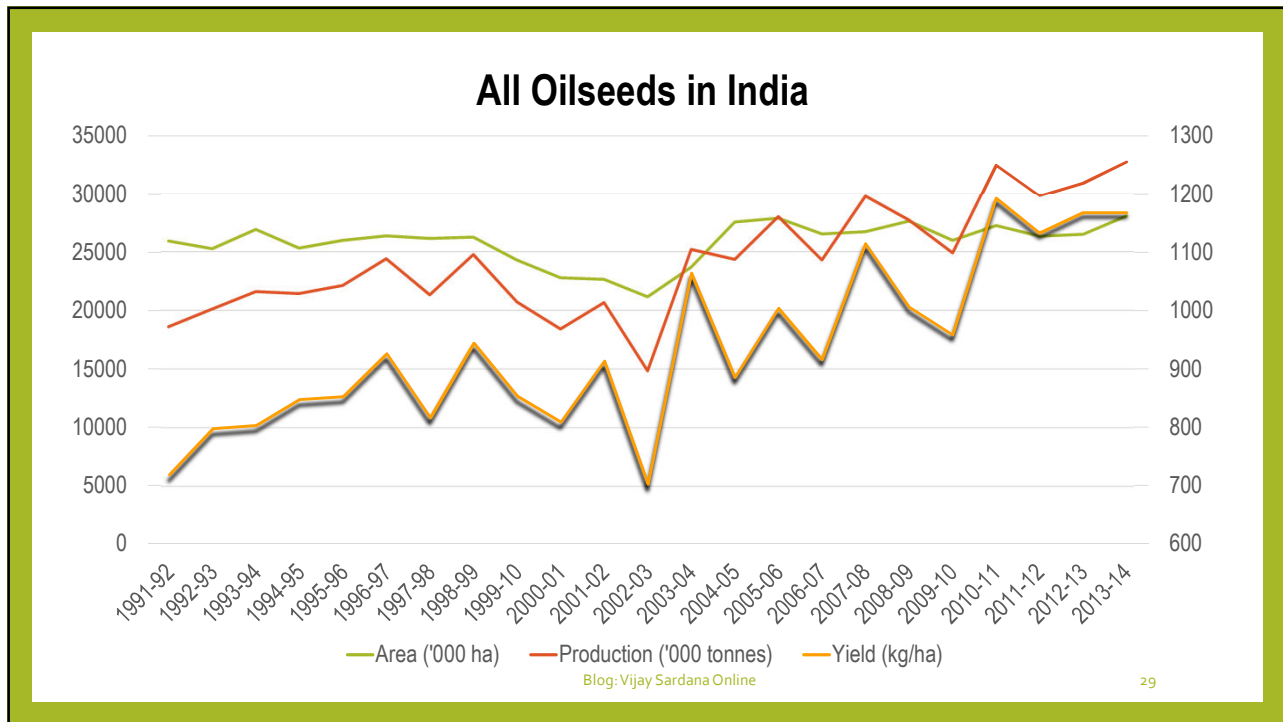
Oilseed Production, Productivity & Area Under Cultivation Since 1991 Liberalization











Future of Edible Oil Sector in India

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Demand Estimation for Edible Oils

Food Application (minimum):

- Average recommended daily intake per capita = 30 gms
- Population in India by 2025 = 1400 million
- Total demand = 42 million kgs / day
= 15.33 million tons/year

Based on Consumption Patterns:

- Average consumption per capita = 15 kg /year
- Population in India by 2025 = 1400 million
- Total demand = 21 million tons/year

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Table 1. Demand projections of vegetable oils for India

Demand source	2020	2030	2040	2050
Projected population (billion)	1.32	1.43	1.55	1.68
<i>Per capita consumption considering 50, 60, 70 and 75% above the prescribed consumption levels during 2020, 2030, 2040 and 2050, respectively</i>				
<i>Per capita consumption (kg/ annum)</i>	16.43	17.52	18.62	19.16
Vegetable oil requirement for direct consumption (million tonnes)	21.69	23.13	24.58	25.29
Vegetable oil requirement for non-industrial uses (million tonnes)	3.57	6.34	9.69	10.61
Total vegetable oil requirement (million tonnes)	25.26	29.47	34.27	35.90
Vegetable oil availability from secondary sources (million tonnes)	5.05	5.89	6.85	7.18
Total vegetable oil requirement from annual oilseed crops (million tonnes)	20.21	23.58	27.42	28.72
Total vegetable oilseeds requirement from nine annual oilseed crops (million tonnes)	67.37	71.45	80.65	82.06

Source : Vision Document of ICAR

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Major recent decisions in respect of edible oils during 2014-15

- Vide Notification No. 108 (RE-2013)/2009-2014 dated 6th February, Export of edible oils in branded consumer packs is permitted with a Minimum Export Price of USD 900 per MT.
- Vide Notification No. 17/2015-20 dated 6th August, 2015, Organic edible oils subject to export contracts being registered and certified as 'Organic' by Agricultural & Processed Food Products Export Development Authority (APEDA) and Rice Bran Oil in bulk have been exempted from the ban on export of edible oils.
- Vide Notification No. 46/2015-Customs dated 17th September, 2015, the import duty on crude oils increased from 7.5% to 12.5% and import duty on refined edible oils has been increased from 15.0% to 20.0%.
- With the implementation of FSSAI Act, 2006 w.e.f. 5th August, 2011, the edible oils industries is now governed by FSSAI for issue of license, safety and standard parameters. However, the date monitoring of procurement for the edible oil industries are being administered by DVVOF under Vegetable Oils Products, Production and Availability (Regulation) Order, 2011

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Name of Oil	Rates of Import Duty / Effective Dates										
	70 % (11/08/06)	60% (24/01/07)	50% (13/04/07)	45% (23/07/07)	20% (21/03/08)	0% (01/04/08)	0% (17/03/12)	2.5% (23/01/13)	2.5% (23/01/13)	7.5% (24/12/2014)	12.5% (17/09/2015)
Crude Palm Oil	70 % (11/08/06)	60% (24/01/07)	50% (13/04/07)	45% (23/07/07)	20% (21/03/08)	0% (01/04/08)	0% (17/03/12)	2.5% (23/01/13)	2.5% (23/01/13)	7.5% (24/12/2014)	12.5% (17/09/2015)
RBD Palmolein	80 % (11/08/06)	67.5% (24/01/07)	57.5% (13/04/07)	52.5% (23/07/07)	27.5% (21/03/08)	7.5 (01/04/08)	7.5 % (17/03/12)	7.5 % (17/03/12)	10% (20/01/2014)	15% (24/12/2014)	20% (17/09/2015)
Crude Soybean Oil	40% (23/07/07)	0% (01/04/08)	20% (18/11/08)	0% (24/03/09)	0.00% (21/03/08)	0.00% (01/04/08)	0% (17/03/12)	2.5% (23/01/13)	2.5% (23/01/13)	7.5% (24/12/2014)	12.5% (17/09/2015)
Refined Soybean Oil	40% (23/07/07)	7.5 % (01/04/08)	7.5 % (18/11/08)	7.5 % (24/03/09)	7.50% (21/03/08)	7.50% (01/04/08)	7.5 % (17/03/12)	7.5 % (17/03/12)	10% (20/01/2014)	15% (24/12/2014)	20% (17/09/2015)
Crude Sunflower Oil	65% (24/01/07)	50% (01/03/07)	40% (23/07/07)	20% (21/03/08)	0% (01/04/08)	0% (24/03/09)	0% (17/03/12)	2.5% (23/01/13)	2.5% (23/01/13)	7.5% (24/12/2014)	12.5% (17/09/2015)
Refined Sunflower Oil	75% (24/01/07)	60% (01/03/07)	50% (23/07/07)	27.5% (21/03/08)	7.5 % (01/04/08)	7.5 % (24/03/09)	7.5 % (17/03/12)	7.5 % (17/03/12)	10% (20/01/2014)	15% (24/12/2014)	20% (17/09/2015)

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Focus Crops for Policy Intervention for Doubling Farmers Income with Least Marketing Challenges

1. **Soybean** : 11 million ha. area under cultivation, large number of small farmers are involved across the country and new area is likely to come under cultivation. India is deficit in protein as well. Soybean is also major source of protein for human and livestock sector.
2. **Hyola / Mustard/ Rapeseed** : 6.5 million ha. under cultivation. Very rich in oil content minimum 40%. Large number of farmers are involved because there is no alternate crop during this season. Huge employment potential because of low capital cost required for processing facility. Oilcake is used in cattle feed.
3. **Palm Oil cultivation**: Very high yielding crop but will remain localized due to agro-climatic constraints. Used both in edible and non-edible applications.

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Policy Recommendations

1. Promote technology intervention to boost productivity.
2. Charge 2% Oilseed Development Cess for oilseed development (in line with Basmati Development Cess)
3. There must be 20% gap in customs duty between crude oil and refined oil (Reason : Because 6% to 10% are refining losses depending upon quality of oil used, plus processing cost, plus investment and overheads, current 7.5% duty gap makes no sense, 15% is breakeven, 5% should be incentive for investment in make in India scheme). **It means, customs duty should be 10% for crude oil and 30% for refined oil.**
4. Focus on high oil bearing material like Mustard. Duty on crude rapeseed oil must be increased it is used for adulteration in local mustard oil and hurts farmers income because pure mustard oil is must to ensure remunerative price.
5. For Soybean we have to compete with USA, Brazil and Argentina, for that we have to double out productivity. **Development Cess will help in farmers education and technology transfer.**

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Case Study for Mustard Crop:

How to Achieve the Target of 10 million tons of Rape-seed Mustard?

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Proposal from the Author: Based on Factual Assessment

Let us develop location wise action plan and it is very easy and doable.

Table 5: Impact of technological components on the productivity of rapeseed-mustard

Technological components	Increase in productivity (%)
Improved varieties	9-45
Plant protection measures	7-24
Recommended fertilizers	16-18
Sulphur nutrient	9-16
Thinning to remove excess plants/sqm	13-16
Thiourea spray at flowering	10-12
Timely weeding	11-27
Chemical weed control	14-35

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The Proposed Action Plan

S. No.	Action required	Expected Benefit	Cost implication
1	Identify soil deficiencies & recommend suitable nutrients	Additional 15%	Product cost, but will be recovered due to extra production
2	Timely control of weeds	Additional 10%	Product cost, but will be recovered due to extra production
3.	Proper and timely plant protection activities	Additional 10%	Product cost, but will be recovered due to extra production
4.	Seed replacement based on agro-climatic and soil conditions	Additional 20% to 50% (Average)	Product cost, but will be recovered due to extra production
	Target is : 50 to 60% increase in output	Additional gain : 55% to 75%	Target can be achieved in 2 to 3 years time.

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How to start?

1. Let us create - “Mission Mustard” – Companies are invited to join Voluntarily only
2. Nominate one person as “Farmers Relation manager”
3. Those who wants to join pl. send the details of their location and let their security guard gates at factory act as extension centers.
4. Map the mustard production area around their factories or total mustard area under their captive farmers’.
5. Let us identify soil testing laboratory in these areas and let industry associations enter into MOU with them about soil testing. It is free. Cost of sending sample, if any will be borne by the local company.

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How to start? (2)

6. With local university / NRC-Mustard develop package of practices based on the location of factory. These can be printed by the companies under their brand and name in technical inputs from University and NRC-M.
7. Let us have meeting with Seed and Crop-care companies to source quality inputs for our farmers. If data given by NRC-M & CACP is correct, without GM technology we can achieve the same, focus on seed replacement.
8. If required, associations should coordinate training of field staff at NRC-Mustard / Agri. Universities, if any.
9. Let us create a helpline for farmers in every unit. Farmers Relation manager can be given one mobile instrument and SIM, today calls are free and cost of mobile is less than the cost of the “bottle”.
10. **Still in doubt in implementation, contact the author.**

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This is “Mission Possible”.

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Open for Discussion...



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