

Oilseeds sector in India: A trade policy perspective

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ABSTRACT

The government had been intervening in the oilseed sector from time to time in the form of production, price and trade related policies to improve edible oils availability in India. In this paper, we analyse the impact of trade policy measures adopted by the government to improve domestic oilseeds production. A simultaneous equation simulation model was applied to find out the impact of recent import duty hike on palm oil on production and consumption of edible oils in India. The tariff hike will benefit the oilseeds growers through increase in the price of edible oils. The net impact in the economy will be negative due to the higher reduction in consumer surplus that may outweigh the increase in producer surplus and government revenue. The duty hike may yield short term benefit but improvement in yield, proper procurement and strengthening of edible oils processing industries are the keys for long term strategy for revival of the sector.

Key words: AIFTA, ASEAN, Edible oils, Imports, Oilseeds, Tariff

Oilseeds and edible oils play an important role in Indian economy. The Indian edible oil sector is the world's fourth-largest after the US, China and Brazil. India is a key player in the world edible oils market accounting for around 7% share of production, 12% share of consumption and 20% share of world edible oils imports during 2016-17 (USDA 2018). However, growth in domestic edible oils production has not been keeping pace with that of consumption. The domestic demand for edible oils and fats has been increasing rapidly at the rate of 6% per annum, but domestic output has been increasing just by 2% per annum. More than half of the consumption is met through imported oils and three-fourths of these edible oils imports are palm oil from Indonesia and Malaysia (Sainy and Gulati 2017). The demand supply gap is becoming wider mainly due to lower production of oil seeds and shifting of acreage to other crops. The continued increase in the gap between demand and supply of edible oils over the years has forced India to do huge import of edible oils causing considerable drain in the foreign exchange. The quantity of edible oils imported was 4.3 MT costing around ₹ 4320 crores in 2000-01 which has been increased to 15 MT costing around ₹ 65000 crores in 2015-16. The government interventions in the past such as Technology Mission on Oilseeds, 1986 have not provided outpacing results due to the supply side constraints.

India's rich agro-biological diversity is favourable for production of all oilseeds. But, productivity of cultivated

edible oils is very low even with the price support policies. Also, growing import and stagnation in domestic production is often attributed to the trade liberalization policies (Chand *et al.* 2004). These open trade policies has also raised concern about the adverse impact on domestic producers. When India moved towards regionalism with Free Trade Agreement pact with Association of South East Asian (ASEAN) in 2009, the tariff reduction for edible oil especially palm oil was committed which has been criticised for its adverse effect on Indian oilseeds production. However, recently the government has started tightening the import tariff of edible oils in order to protect domestic producers and oil refineries from lower price realization. During August, 2017, the government had increased the import duty on crude palm oil (CPO) from 7.5% to 15% and on refined palm oil (RPO) from 15% to 25%. During mid-November, 2017, duty further hiked to 30% and 40% for crude palm oil and refined palm oil respectively which is highest ever in a decade. Recently in March, 2018 the government has increased the duty for CPO from 30 to 44% and for RPO from 40 to 54%. In this background, with the help of simulation models, we tried to find out impact of these duty hikes on domestic prices, production and consumption of edible oils as well as on different stakeholders like producers, consumers and government. As the edible oils imports are mainly from ASEAN countries, we also investigate the effect of duty hike in terms of ASEAN-India Free Trade Agreement.

MATERIALS AND METHODS

The data on area, production and productivity of the oilseed crops in India were obtained from various issues of *Agricultural Statistics at a Glance*, published by the

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Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India. The data regarding world production, consumption and yield of different edible oils were taken from Food and Agricultural Organisation (FAO). The import data on edible oils were collected from UNCOMTRADE and publications of Directorate General of Commercial Intelligence and Statistics (DGCI&S). The domestic prices of different edible oils were taken from the website of the office of the Economic Advisor, Ministry of Finance and international prices were taken from Pink Sheet, World Bank.

In order to assess the overall welfare effect in the economy, impact of tariff changes on domestic producers and consumers also should be studied. For this, a simultaneous equation system developed by the International Food Policy Research Institute (IFPRI 2012) was adopted. The model allows simulations of changes in import tariffs, as well as changes in the world price, supply shifts, and changes in income. The model simulates the effect of these changes on production, consumption, imports and prices of importing country.

RESULTS AND DISCUSSION

To reduce the import dependency and to achieve self-sufficiency in oilseeds, structured support policy programmes were initiated in the country in the beginning of 1980s. Among the programmes like development project for groundnut in 1980-81, for soybean in 1981-82 and most important one Technology Mission on Oilseeds in 1986 were initiated along with price support policies (Acharya 1993). The trends in area, production and yield of oilseeds shows that, these policy interventions had provided impetus in increasing area and production in 1980s to mid-1990s (Fig 1). The area under oilseeds had increased by 7 million ha from 18 million ha in 1980-81 to 25 million ha in 1993-94. Since then, there has not been much expansion in the area under oilseeds cultivation. The production had increased from 9 million tonnes in 1980-81 to 22 million tonnes in 1993-94 thereafter, it averaged around 25 million tonnes. The year 1993-94 is of the importance that palmolein

import were kept in Open General Licence as a part of trade liberalization which has resulted in increased import of cheap oil. The fluctuations in yield was mainly because that more than 70% of the oilseeds cultivation is in dryland and rainfed conditions. Even though the expansion of area under oilseeds was at the cost of coarse cereals and pulses during 1980s, the oilseed cultivation was not found attractive to farmers (Ramasamy and Selvaraj 1993).

The growth rate in area, production and yield for the period 1980-81 to 2015-16 are presented in Table 1. A significant growth in area (1.09%), yield (1.91%) and production (3.03%) were recorded for nine oilseeds in this period. However, when we look into the individual data, only few crops come in positive side. Positive growth in area has been observed in rapeseed and mustard (1.27%), soybean (8.69%), coconut (1.88%) and castor (1.80%), whereas negative growth in area has been observed in groundnut (-1.28%), sesame (-1.60%), safflower (-4.75%), linseed (-5.24%) and niger (-2.25%). Highest growth in production was observed in soybean (10.17%) followed

Table 1 Growth in area, production and yield of oilseeds 1980-81 to 2015-16

Oilseed crop	Area (Mha)	Production (MT)	Yield (kg/ha)
Groundnut	-1.28**	0.26	1.51**
Rapeseed-Mustard	1.27**	3.27**	1.96**
Soybean	8.69**	10.17**	1.36**
Sunflower	1.48	2.67*	1.26**
Sesame	-1.60**	0.96**	1.99**
Castor	1.80**	5.49**	3.58**
Safflower	-4.75**	-4.39**	0.53
Linseed	-5.24**	-3.58**	1.81**
Niger	-2.25**	-2.27**	1.32
Nine oilseeds	1.09**	3.03**	1.91**
Coconut	1.88**	3.51**	1.81**

**, * denote 5% and 10% level of significance, respectively.

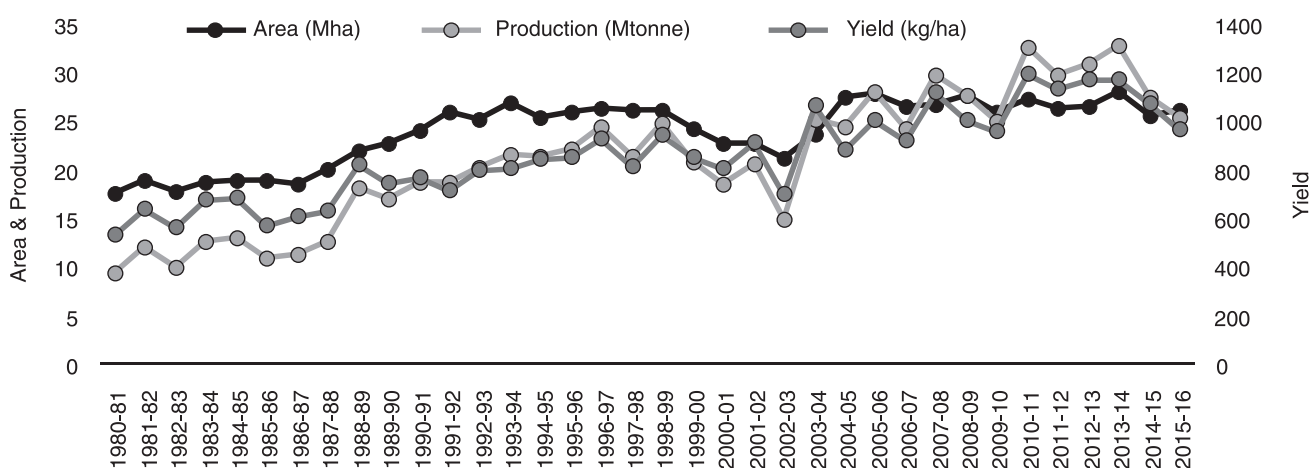


Fig 1 Trends in area, production and yield of nine oilseeds in India.

Table 2. India's share in world production and comparison of productivity, 2014

Oilseeds crop	India's share in world production (%)	Average yield	
		India (t/ha)	World (t/ha)
Castor oil seed	88.80	1.67	1.35
Coconuts	18.31	5.18	5.07
Groundnuts (with shell)	14.93	1.40	1.65
Linseed	5.31	0.50	1.01
Rapeseed	10.67	1.19	2.04
Safflower seed	15.40	0.54	0.78
Sesame seed	13.01	0.46	0.58
Soybeans	3.43	0.97	2.61

Source: FAOSTAT

by castor (5.49%). For linseed, positive growth rate in yield (1.81%) couldn't transform into positive growth in production due to larger decline in the area (-5.24%). The area, yield and production growth rate of coconut were recorded significantly positive growth of 1.88, 1.81 and 3.51%, respectively.

Despite having major share in world production, majority of Indian oilseeds have comparatively lower productivity at the global level (Table 2). India dominates in the world castor oil production with 88.80% share in world production and higher yield (1.67 tonnes/ha) as compared to world average (1.35 tonne/ha). Coconut which constitutes 18.31% of the world production have the yield of 5.18 tonnes/ha which is marginally higher than world average. Soybeans which constitute 3.43% share of world production have very low yield (0.97 tonnes/ha) compared to world average (2.61 tonnes/ha). The similar trend can be seen in linseed and rapeseed also.

Coming to the export and import trend of major edible oils by India, except soybean oil, all other edible oils have exhibited a positive growth rate for the period 2001-16 (Table 3). Export of groundnut oil exhibited the highest growth

Table 3. Trend in export and import value of major edible oils from 2001 to 2016

Crop	CAGR (%)	Coefficient of variation
<i>Export</i>		
Groundnut oil	26.93	101.43
Sesame oil	21.04	65.90
Soybean oil	-10.75	91.38
Castor oil	15.25	58.64
<i>Import</i>		
Palm oil	16.57**	7.99
Sunflower oil	-8.87	276.06
Soybean oil	12.07**	67.80

**denote 5% level of significance

(26.93%) with the higher variation (101.43%). Export of castor oil also improved with a growth rate of 15.25% with lesser variation (58.64%) as compared to other oils. Trend in import of major edible oils from India for the same period shows that palm oil has the highest growth rate (16.57%) with lesser variation (7.99%) compared to other two oils. Import of soybean oil exhibited a positive growth rate of about 12.07% with a variation of about 67.80%. Sunflower oil import has shown a downward trend in import growth (-8.87%) with higher coefficient of variation (276.06%). The higher variation in sunflower oil may be due to the year round fluctuations in the import quantity.

Price incentives for edible oils production

Government had been providing price support for production of oilseeds since 1980s. Oilseeds have always been placed on top in case of minimum support price (MSP) compared to rice and wheat which is clearly visible with the wide gap in MSP between cereals and oilseeds (Fig 3). However, a simple comparison of market performance in terms of wholesale price indices edible oils are not even par with cereals (Fig 4). This indicates the lacuna in the

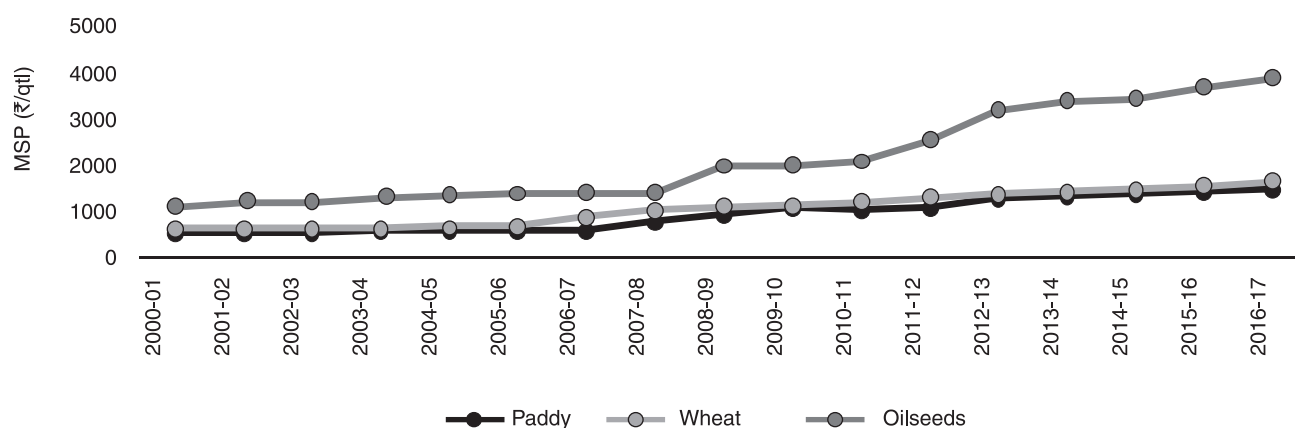


Fig 3. Trend in MSP of cereals vs edible oils 2000-01 to 2016-17.

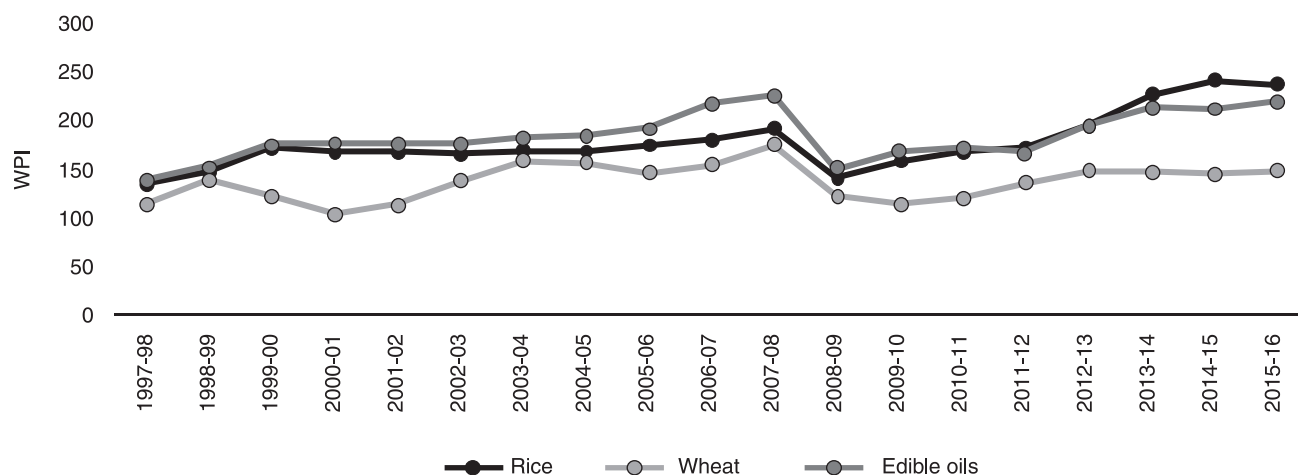


Fig 4 Trend in wholesale price indices of cereals and edible oils.

implementation of procurement and marketing policies. This may also be related to the cheap import of edible oils mainly crude and refined palm oil which makes domestic edible oils price lower.

India's commitment with ASEAN

Given the constraints in production and price support policies, we further investigated the impact of import of edible oils in domestic oilseeds sector. Palm oil, cheapest among the edible oils is the largest imported commodity by India. The import prices of palm oil has an influence on Indian edible oils market as it is the cheapest blender in other oils. India's palm oil import is primarily sourced from Indonesia and Malaysia, members of Association of South East Asian (ASEAN) Economic community. Both the countries together supply more than 80% of palm oil globally. When India had signed Free Trade Agreement with ASEAN in 2009, crude palm oil (CPO) and refined palm oil (RPO) were kept in Special Product category offering slow pace of tariff reduction. The tariff commitment schedule of India in these commodities are given in Table 5. The tariff reduction will be according to the Most Favoured Nation (MFN) rate from the base year 2007 up to the year 2019, the final year of agreement. For CPO, tariff will be reduced from 80 to 37.5% and for RPO, tariff will be reduced from 90 to 45%. The rate of tariff reduction is around 7% annually with overall reduction of 53% for CPO and 50% for RPO from the year 2007 to 2019. So, after 2019 even if India wants to increase the tariff, ceiling is kept at 37.5% and 45%, respectively. More clearly, if India wants to increase the tariff of imported palm oil, it can increase

within this limit. The recent hike of CPO (from 30 to 44%) and RPO (from 40 to 54%) by the government is possible in the short term applicable till December, 2018. By 2019 January, the existing rates has to reduce to 40% and 50% for CPO and RPO, respectively. At the end of December 2019, the respective rates should come down to 37.5% and 45%. This also indirectly says that production as well as manufacturing or oil refineries should be so efficient to produce enough edible oils to meet existing as well as future domestic demand.

Given the tariff reduction schedule, we now focus on the implications of tariff hike on domestic oilseeds sector. We applied simultaneous equation model to assess the impact of recent tariff hikes on production, consumption and government revenue. We have created three scenarios for CPO and RPO separately. In first scenario, earlier hike of CPO (from 15 to 30%) and RPO (from 25 to 40%) were simulated. The second scenario indicates impact of maximum possible hike in tariff based on tariff reduction commitment of India under ASEAN-India Free Trade Agreement, AIFTA (i.e. 37.5% for CPO and 45% for RPO respectively). In third scenario, recent hike of CPO (from 30 to 44%) and RPO (from 40 to 54%) were simulated.

The immediate effect of duty hike on CPO and RPO can be seen in reduced imports of palm oil as well as domestic consumption (Table 6). The domestic edible oil price may increase by around 12.69% which will have positive impact on domestic production (6.28% increase) and in turn a positive producer surplus (US \$ 939). In the case of refined palm oil, the price increase may around 11.55% with 5.73% increase in production and producer

Table 5 Tariff reduction schedule of India in crude and refined palm oil

Tariff line	Base rate (2007)	Tariff rate (%)						
		2010	2015	2016	2017	2018	2019	31.12.2019
CPO	80	76	56	52	48	44	40	37.5
RPO	90	86	66	62	58	54	50	45

Source: ASEAN-India FTA document. CPO-Crude palm oil; RPO-refined palm oil

surplus (US \$ 937). Government will also get benefit in terms of tariff revenue on account of duty hike for crude (74.22%) and refined (41.12%) palm oil respectively. It can also be observed that the duty hike on CPO have higher effect than that of RPO despite an equal percentage hike on duty for both (i.e. 15%). This indirectly indicates that, operation cost of domestic oil refineries may go up due to the costly import of CPO which will in turn reflected in domestic price. The net impact in the economy will be negative due to the higher reduction in consumer surplus that outweigh the increase in producer surplus and government revenue. Ultimately, negative effect of duty hike will pass on to the consumers who has to bear the burden of high price. This also mean that, consumer may shift to other locally available edible oils which will help in reducing the import dependency.

In the second scenario, we have taken maximum tariff under AIFTA applied for CPO and RPO. The base value for the simulation was considered according to first scenario. Specifically, for CPO we have considered the base tariff as 15% as base and maximum applied tariff is 37.5 as per AIFTA rules. Similarly for RPO, these values are 25% and 45% respectively. From the simulations, we can observe the multiplied effect of tariff reduction in entire variables considered in the first scenario (Table 7). The effect of duty hike is high in the case of CPO as compared to RPO which was visible in first simulation also. The price increase will be around 23% for crude palm oil while 20% for RPO. The edible oil production increase will be by 11% in case of duty hike in CPO and by around 10% in case of RPO with the maximum hike in tariff. Comparing both the results, tariff hike will be benefitting oil palm cultivators and domestic refineries through increase in prices.

We further calculated the impact of recent duty hike and compared with earlier hike in third scenario (Table 8).

Table 6 Tariff hike of crude palm oil and refined palm oil, Scenario 1

Change in variables	CPO	RPO
	From 15 to 30%	From 25 to 40%
Change in production (%)	6.28	5.73
Change in consumption (%)	-5.80	-5.32
Change in imports (%)	-12.89	-11.80
Change in tariff revenue (%)	74.22	41.12
Change in price (%)	12.69	11.55
Change in consumer surplus (million US\$)	-2319	-2397
Change in producer surplus (million US\$)	939	937
Change in welfare for producers and consumers (million US\$)	-1452	-1460
Change in tariff revenue (million US\$)	1184	1105
Net impact (million US\$)	-268	-355

Table 7 Tariff hike of crude palm oil and refined palm oil, Scenario 2

Change in variables	CPO	RPO
	From 15 to 37.5%	From 25 to 45%
Change in production (%)	11.08	9.90
Change in consumption (%)	-9.79	-8.84
Change in imports (%)	-21.95	-19.77
Change in tariff revenue (%)	95.12	44.42
Change in Price (%)	22.88	20.34
Change in consumer surplus(million US\$)	-4266.56	-3811.40
Change in producer surplus(million US\$)	1743.34	1540.99
Change in welfare for producers and Consumers(million US\$)	-2523.22	-2270.41
Change in tariff revenue(million US\$)	1536.80	1100.49
Net impact (million US\$)	-986.42	-1169.92

In this, for CPO, where tariff was hiked from 30 to 44%, we can observe only little bit improvement in all the variables considered. The effect of duty hike is high in the case of CPO as compared to RPO in third scenario also despite the equal percentage hike (i.e. 14%). The price increase will be 12.08% for CPO while 11.06% for RPO which is almost similar to the case of first scenario. Oilseeds production increase will be by 5.88% due to hike in CPO and by 5.36% due to hike in RPO. Comparing all the results, we can infer that, domestic refineries may be benefitted more as CPO is likely to be cheaper than RPO due to the lesser tariff reduction.

It is certain that India can't prolong the tariff hike given the commitment with ASEAN countries. The tariff hike is not

Table 8 Tariff hike of crude palm oil and refined palm oil, Scenario 3

Change in variables	CPO	RPO
	From 30 to 44%	From 40 to 54%
Change in production (%)	5.88	5.36
Change in consumption (%)	-5.44	-4.99
Change in imports (%)	-12.08	-11.06
Change in tariff revenue (%)	28.94	20.07
Change in Price (%)	11.85	10.78
Change in consumer surplus (million US\$)	-2236	-2241
Change in producer surplus (million US\$)	875	873
Change in welfare for producers and consumers (million US\$)	-1361	-1369
Change in tariff revenue (million US\$)	862	771
Net impact (million US\$)	-499	-598

the only solution as it may have short term benefit of raising prices favouring farmers. But it will also hurt large number of consumers. Since demand for edible oil may continue to rise in future, higher import duty also have larger impact on the economy. So, balanced approaches should be made to fix the tariff rate so as to protect domestic producers and refineries without compromising the demand of consumers. With the price rise, consumption may be diverted to other domestic cheap oil but lower yield level of oilseeds is a problem before us to tackle. Strengthening of domestic oil processing industry by raising capacity utilization should also be done in tandem with improvement in production and procurement so as to make edible oil available to the domestic consumers.

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