Oils and Fats in India

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INTRODUCTION

With the world's second largest population of 1.25 billion and her oils and fats consumption estimated at 18.83 million tonnes in 2012, India is one of the world's leading oils and fats economies. Based on *Oil World Annual 2012*, India was one of the largest producers of oilseeds in the world in 2011, both in terms of area and output. However, India was also the third leading importer of oils and fats in 2011. *Oil World Statistics* indicates that India had the world's largest harvested area for oilseeds at 37.53 million hectares, but India's oilseed yield remains extremely low at an average of 0.88 t ha^{-1}, compared with the world average of 1.76 t ha^{-1}. Therefore, India ranked fifth in terms of oilseed production (32.99 million tonnes) and eighth in terms of total oils and fats production (9.41 million tonnes).

OILSEED PRODUCTION

The nine major oilseeds cultivated in India are groundnut, mustard, soyabean, sesame, sunflower, safflower, castor, linseed, and niger seed. Cottonseed is also a valuable source of edible oil in India, even though it is not planted as a main crop.

One or more oilseeds are cultivated in each state. Madhya Pradesh, Andhra Pradesh, Gujarat, Rajasthan, Maharashtra, Karnataka, Tamil Nadu, and Uttar Pradesh account for nearly 90% of the oilseeds area and production in the country. Indian oilseed cultivation has not only been restricted to rain-fed areas which account for nearly 80% of the oilseeds acreage, but is also highly dependent on rain in the absence of irrigation facilities. As a result, the output fluctuates from year to year.

India's demand for oilseeds is influenced by the crop-harvesting seasons of *rabi* (winter) and *kharif* (summer). The *rabi* crop is sown in October/November (grown on irrigated lands) and is harvested in March/April, whilst the *kharif* crop is sown in June/July (monsoon months) and is harvested in October/December. Output in the winter season contributes about 70%-75% of the total oilseed output. Groundnut and soyabean are the country's main winter oilseed crops. The period from June to October is the lean season, during which demand is met by importing oils. Imports are especially significant during the Diwali festival season, which falls in October/November every year.

Despite being among the world's largest oilseed producers, the country's output has not been sufficient enough to meet requirements of her huge population of 1.25 billion as of February 2012. One of the factors that contributed to an inadequate domestic supply of oilseeds is the low oilseed yield in comparison with other crops, especially food grains.

- *Minimum Support Price (MSP) Programme*: Under

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TABLE 1. OILSEEDS AND VEGETABLE OIL PRODUCTION IN INDIA

Year (November-October)	Oilseed production	Availability of vegetable oils (million tonnes)		
		Edible	Non-edible	Total
2007-2008	29.76	7.75	0.78	8.24
2008-2009	27.72	7.71	0.60	8.21
2009-2010	24.88	7.26	0.51	7.77
2010-2011	32.48	7.92	0.60	8.52
2011-2012	29.80	7.34	0.78	8.12

Source: Solvent Extractors Association of India (SEAI) and Ministry of Agriculture, India.

this programme, which has often favoured the production of crops that compete for area with oilseeds, the Indian Government annually sets minimum prices — based primarily on estimated production costs for crops such as rice, wheat, coarse grains, pulses and various oilseeds — and will defend these prices by making purchases after each harvest. The Government has regularly supported wheat and rice MSPs, but price support for oilseeds has usually not been funded. As a result, the increasingly favourable returns to wheat and rice have detracted farmers from producing oilseeds, thus lowering oilseed production.

- *Low Oilseed Yields*: Oilseed yields in India are among the world's lowest in contrast to India's wheat and rice yields. This can be attributed to the Indian Government's policy of supporting the production of wheat and rice over oilseed production. Agricultural research and infrastructure investments have focused on the former crops and on regions where land and water resources are most conducive for their production. Consequently, there is a lack of high-yielding oilseed varieties suited to local growing conditions. Another related factor is the poor quality of seed commonly available from many seed merchants, as well as the tendency for Indian farmers to use saved seed (rather than purchased seed), which are associated with lower yields.

There is also a lack of irrigated land devoted to oilseed production, which has left most oilseed production vulnerable to weather-related yield risks. In regions where irrigation is most common, other crops remain more profitable than oilseeds. Low labour productivity in India's agriculture sector also contributes to low oilseed yields. There is a minimal level of capital machinery used in agriculture, a lack of economies of scale, and inefficient production practices.

Oilseed imports. The Indian Government allows oilseed imports during times of insufficient domestic production. However, the amount of oilseeds imported is restricted by the high import duty and safety measures imposed by the Indian Central Government, which include the following:

- required splitting/cracking of soyabean seed at the port (under the Plants, Fruits and Seeds - Regulation of Import Order 1989); and
- phytosanitary regulations/ quarantine restrictions (under the New Policy on Seeds Development 1988).

Under the New Policy on Seeds, oilseeds are subject to a license requirement, wherein an import permit and a phytosanitary certificate with additional declarations must accompany all consignments. Seeds could also be retained for 30 days or more for inspection and clearance if imported through the Plant Protection and Quarantine offices. In 2010, the country imported a total of 18 700 t of oilseeds, with rapeseed being the most prominent (16 600 t).

Oils and fats production. According to *Oil World* data released on 8 February 2013, the total production of oils and fats was reduced by about 4.5%, from 9.69 million tonnes in 2011 to 9.25 million tonnes in 2012. The main oils produced in India include butter as fat (25.8%), rapeseed oil (23.5%), and soyabean oil (17.3%).

Oils and fats imports. India will continue to depend on imports of oils and fats. Local edible oil production (which is about 9.25 million tonnes) is insufficient to meet domestic demand. The trade policy reforms of the mid-1990s fuelled

the increase in edible oil imports, which now only meets 45%-50% of the country's consumption requirements. The major oils imported in 2012 were palm oil at 7.81 million tonnes (75%), soyabean oil at 1.18 million tonnes (11.3%), and sunflower oil at 1.11 million tonnes (10.7%). According to the Solvent Extractors' Association of India (SEAI), the country will continue to depend on imports in the future, mainly for crude palm oil, crude palm olein, and crude soyabean oil, as these have been the least expensive options. Palm oil is primarily sourced from Malaysia and Indonesia. Despite being the most prominent oil imported, palm oil's share fluctuates depending on soyabean oil intake. Higher soyabean oil intake would result in a decline or marginal increase in palm oil share.

Oils and fats exports. As a result of insufficient oils and fats production, India does not allow mass amounts of such exports. Therefore, the volume of oils and fats exported varies each year. In 2012, the total oils and fats exported amounted to 787 000 t. Castor oil, being the primary oil exported, accounted for 58% of total exports (or 460 000 t) in 2012.

Domestic disappearances. India consumes almost 18 million tonnes of oils and fats annually. However, in 2011, the consumption rose to 18.07 million tonnes of oils and fats. The major oil consumed is palm oil at 6.791 t (37.9%), followed by soyabean oil (14.39%), butter as fat (12.9%) and rapeseed oil (13.8%). Per capita consumption in 2011 was 14.6 kg, which is below the world average of 16.8 kg. Soyabean oil, rapeseed/mustard oil, palm olein and butter are for edible consumption while coconut oil, linseed oil and tallow are used mainly for non-edible applications. Edible oil consumption accounts for 85% of the total oils and fats, while the soap industry and other industrial applications make up the rest. Total consumption of oils and fats for October/September (2011/2012) was forecast at 18.62 million tonnes, of which palm oil was the major oil consumed at 7.06 million tonnes.

PALM OIL IN INDIA

Oil Palm Plantations and Cultivation in India

At present, oil palm is planted on about 170 000 ha. The country produces an average of 300 000 t of palm oil per year. The budget had stated that oil palm cultivation in the country will expand by 60 000 ha in 2011-2012. The proposed allocation for this purpose will be given to eight states: Andhra Pradesh, Karnataka, Tamil Nadu, Orissa, Mizoram, Gujarat, Maharashta, and Chhattisgarh. Land ownership restrictions, unexpectedly low yield, extreme climate, poor rainfall and inadequate irrigation systems have hindered a more successful expansion.

Imports of Palm Oil

Market share gains for palm oil and soyabean oil are largely due to increased access to imports. Palm oil experienced more rapid growth than soyabean oil because of its generally lower price in world markets. The strong growth of palm oil and soyabean oil imports, as well as their rising share in consumption, largely reflect the sensitivity of Indian consumers to price changes.

Contributing further to the increase in consumption of palm oil and soyabean oil is the nature of vegetable oil sales and marketing in India. Producers and merchants encounter strong incentives to supply blends that include lower costing oils, both to compete for price-sensitive consumers and to seek higher margins by marketing unlabelled blends as pure traditional oils, such as groundnut oil or rapeseed oil, which usually sell at a premium.

Generally, India imports more oils during the third and fourth quarters of each year as the domestic production of oils is then lower and festival demands are greater.

Export Performance of Malaysian Palm Oil

Exports of Malaysian palm oil products in 2012 amounted to about 2.63 million tonnes, an increase of 57.7% compared with 1.67 million tonnes in 2011. Crude palm oil was the major palm oil product imported by India in 2012 at 2.16 million tonnes. Imports for the period of January-April 2013 was 608 361 t, an increase of 92.1% compared with 576 645 t during the same period in 2012.

Exports of Malaysian palm kernel oil products to India in 2012 were at 43 187 t, an increase of 85.7% compared with 23 255 t in 2011. Palm kernel fatty acid distillate was the major palm kernel oil product exported to India in 2012, accounting for 19 085 t, followed

by crude palm kernel oil at 15 640 t. Imports of palm kernel oil for the period of January-April 2013 totalled 26 787 t, a decrease by 37.3% compared with imports in same period in 2012.

There was no export of Malaysian palm kernel cake to India in 2012 or any import for the period of January-April 2013. Exports of finished products decreased by 14.8% from 2613 t in 2011 to 2226 t in 2012. The major finished product exported to India in 2012 was shortening which accounted for 874 t. Imports of finished products for the period of January-April 2013 amounted to 720 t compared with 4644 t in the same period in 2011.

Exports of oleochemical products to India increased by 37.3% to 164 815 t compared with 120 033 t in 2011. Imports for the period of January-April 2013 decreased by 6.1% to 50 898 t compared with 54 230 t during the same period in 2012 (*Table 2*).

Palm Oil Seasonal Consumption Patterns

Summers (March-June) – Highest consumption rate

High temperatures (35°C-45°C) prevent palm oil from becoming cloudy.

Monsoons (July-October) – Reasonably high consumption

The highest temperatures are within 30°C-40°C, so palm oil is still favoured.

Winters – Low consumption

The highs are in the range of 15°C-30°C, and lows range from 5°C-15°C. The lowest temperatures usually occur in North and Central India, causing palm oil to become cloudy and semi-solid, which discourages its usage as Indian cooking oil must be in a liquid form.

EDIBLE OIL MARKET TRENDS IN INDIA

Consumption Pattern

Consumption trends in India are marked, not just by rising overall consumption, but by changing the patterns of consumption as well. In the early 1970s, almost all vegetable oils consumed in India comprised groundnut, rapeseed, and cottonseed oils. Palm, soyabean, and sunflower oils accounted for only 4%. However, over the years, palm oil and soyabean oil have become the leading edible oils consumed because domestic production has not been able to keep pace with demand.

Types of Edible Oil Consumed

Groundnut oil (GNO). GNO used to be the most preferred oil. However, GNO is slowly losing its market share due to high prices and low availability. This is because of the demand for groundnut kernels has grown exponentially, thus creating a shortage of seed available for crushing to extract oil.

Rapeseed/mustard oil. Mustard oil is *kachi ghani* oil which has a strong, bitter taste. The biggest market for this oil is East India, followed by North India.

Cottonseed oil (CSO). This oil has the greatest consumption in Gujarat and its neighbouring areas. The oil is used for frying, making it the preferred option for local fried snack manufacturers. The production of this oil is scattered all over the country.

Sunflower oil (SFO). SFO is favoured by the prosperous classes of South and West India. South India is a big market for this oil, which has had the highest percentage increase in consumption. SFO is forecast to capture a large share of India's growing affluent class and may replace some oils, particularly GNO.

Soyabean oil (SBO). Refined SBO is preferred by the middle and the upper middle classes. SBO has the highest sale in consumer packs.

Palm oil (PO). PO is the highest selling oil in the country. This oil has gained popularity in the out-of-home sector. PO is the preferred oil in South India and coastal East

TABLE 2. EXPORT OF PALM OIL PRODUCTS TO INDIA (t)

Product	2008	2009	2010	2011	2012
Palm oil	970 734	1 354 429	1 169 908	1 667 908	2 631 405
Palm kernel oil	38 808	57 017	30 589	34 039	58 913
Oleochemicals	98 408	129 935	119 208	151 165	203 539

India. As it is generally cost-effective, PO has become the common man's oil. Government oil supplies also come from PO in form of refined, bleached, deodorised (RBD) palm olein.

Other oils. Rice bran oil (RBO) is growing at the same pace as its predicted boost in availability. Furthermore, it has formed a small niche in the health-conscious market. The rest of the other oils exhibit a mixed trend.

Regional Consumption Pattern

An important characteristic of the Indian edible oil consumption pattern is the variation in preferences across the regions. The consumption pattern is divided into four markets: North, East, West and South India. Consumer oil fondness diverges from region to region as preference is based on local oilseed cultivation and regional oil availability, as well as taste disposition.

For instance, in North India, mustard and groundnut oils are favoured due to their pungency, but the market is slowly shifting to soyabean oil for home consumption and palm oil for out-of-home consumption. This region is truly a mixed bag of all oils. East India consumes the least edible oil per capita due to lower income levels. Palm oil has the largest market share there, due to home consumption.

West India is the most prosperous region with the highest per capita consumption of edible oil. Soyabean oil dominates the market due to its local availability. South India is the largest consumer of palm oil for both home consumption and out-of-home consumption. The second preferred oil is sunflower oil.

Blended Oils: Popularity in India

Blended oils are now also gaining in attractiveness, especially among the upper income groups in India. Urban consumers are likely to opt for a blend of oils with a healthy composition. It is well-known that blending may improve the chemical properties and stability of individual oils, and in fact it has been observed that blending palm olein with vegetable oils can produce a higher degree of unsaturation, resulting in blends that are more stable (*i.e.* do not crystallise easily) at low temperatures. It has been shown that vegetable oils such as those from indigenous oilseeds such as rapeseed, groundnut and rice bran are improved by blending with palm olein, *i.e.* the blends are superior to the unmixed oils in quality and stability, including heat stability, primary and secondary oxidation, while the formation of polymers and polar compounds are all reduced.

Currently, the Government allows the blending of only two cooking oils with the proviso that the proportion of one is not less than 20% of the total volume. The Solvent Extractors' Association of India and many other reputable associations in India have proposed blending more than two oils to improve the nutritional value of cooking oils, which they believe will also stabilise the prices of the various oils.

BRANDED OILS *vs.* LOOSE OILS

The edible oil market in India is mainly divided into two types, *i.e.* branded oil and loose oil. Sarwade W.K (2011) highlighted in his article that based on studies on brand preference and consumption pattern of edible oils conducted in Maharashtra, India, the results show that branded oil is preferred over loose oil in the higher income class of consumers. According to the news from the *Hindu Business* line, the consumption of branded edible oils has gone up in the country. Sales of unbranded oils have gone down to 57% in 2011 in the country from 74% in 2005. This change is almost uniform across the country, with some States shifting faster to branded oils. Consumption of unbranded oils in Tamil Nadu dropped to 36% from 61%, and in Karnataka to 36% from 63% during that period. The trend is slowly changing due to the change in lifestyle, improved income or increased purchasing power, and increasing awareness.

CONCLUSION

The demand for oils and fats will continue to grow as India's population continues to expand. Although concerted efforts have been taken to boost domestic production, India will still rely on imports to narrow the gap between supply and demand for at least another five to 10 years as the country is expected to consume more oils and fats. Demand is expected to increase to 21 million tonnes by 2015, as the population continues to grow and based on the per capita income growing by an average of 6% per

year. Palm oil and its derivatives can easily meet this demand more economically than other oils. Palm oil with its advantages as described and being available in nearby Asian countries has a role in supplementing the shortage of supply while consumption continues to increase in India.

One of the ways forward for the Malaysian palm oil industry is to venture further into a higher value chain of oil, even up to the retail level, wherever possible. The Malaysian palm oil industry must redefine its business strategies. One option is for the industry to explore investments in downstream, higher-value retail products in the country itself, through partnerships and strategic alliances with local partners in the market.

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