Growth And Instability in India's Edible Oil Sector: Evidence from Production, Consumption and Trade

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Abstract

The edible oil sector occupies a crucial position in India's agricultural and food economy, given its significance in household consumption, industrial use, and trade. Despite being one of the largest oilseed-producing countries in the world, India remains heavily dependent on imports to meet its growing domestic demand for edible oils. This study examines the growth and instability in India's edible oil sector with specific reference to production, consumption, and trade patterns over the period 2014–15 to 2023–24. Using secondary data sourced from government reports, published literature, and official databases, the study employs descriptive statistical tools such as averages, growth rates, and compound annual growth rate (CAGR) to analyse trends in domestic availability, per capita consumption, and import–export performance. The findings reveal that although domestic availability and per capita consumption of edible oils have shown a moderate long-term increase, the growth trajectory has been uneven and marked by significant year-to-year fluctuations. The sector remains highly vulnerable to external shocks, as evident during the COVID-19 pandemic, which disrupted production, supply chains, and trade flows. Imports continue to dominate the supply structure, with import values exhibiting sharp volatility due to global price movements. While exports have grown in recent years, their scale remains limited and unstable. The study highlights the need for strengthening domestic oilseed production, improving productivity, and reducing import dependence to ensure sustainable growth, price stability, and self-reliance in India's edible oil sector.

Key words: Edible Oil Sector, Oilseed Production, Import Dependence, Per Capita Consumption, Trade Performance

JEL Classification Code: Q11, Q13, Q17, F14, O13

1. Introduction:

Edible oils constitute an important component of food expenditure in Indian households. The edible oil industry is thus, one of the most important industries of agriculture sector in the country. India is also one of the four major players in the vegetable oil scenario of the world next to the USA, China, and Brazil, being one of the important oilseedgrower, oil producer, importer and exporter. However, our country's vegetable oil scenario is multilayered and is greatly influenced by market forces, conflicting interests, vagaries of weather, technology and the production. The surge in growth is mostly originated from growth in palm and soybean as a segment of the edible oil market. Over the past few years, various drivers have contributed to the growth of the industry such as increasing income, urbanization, changing food habits, and deeper penetration of processed foods. Because of current stagnant domestic vegetable oil supplies, vegetable various biotic and abiotic stresses. The Indian vegetable oil industry accounts for about 5 per cent of the world's vegetable oil production. The vegetable oil industry is classified into four categories - small scale expellers or Ghani's, solvent extractors, oil refiners and vanaspati manufacturers. The vegetable oil refinery industry is the largest energy user in the vegetable oil processing sector as compared to crushing and solvent extraction industries. The estimated demand for vegetable oil is over 23mt (million tonnes) which is largely met through importing 15mt of edible oil, spending around Rs. 77,000 crores to meet our annual requirement. Our consumption of vegetable oil, however, has been increasing – and it is expected to grow by 3 percent CAGR and to exceed 34m tonnes by 2030. India is the fifth largest oilseed crop producing country in the world, producing 31.42mt annually and thereby lays a big gap in consumption and production currently. But this is just one side of the story. The edible oil market in India has also witnessed growth in recent years on account of escalating demand for alternatives of edible oil driven by expansion in oil import volumes will continue to fill the majority of the supply-and-demand gap over the next decade. Palm oil, soy oil, and sunflower oil are expected to penetrate regional markets further in the future. Due to the growing awareness for health and the increase in population base, adoption of western lifestyle and the rising affordability of branded products, packaged edible oil segment will lead the way for the future growth of the industry. However, there is a need to increase domestic oilseeds production or pursue other options to meet the rising vegetable oil demand. Edible oil industry happens to be the key player in the economic development of the country and its long-term outlook is highly favourable, if the increasing demand is synced with the level of production and challenges such as low yield hectare are addressed. The progress of edible oil during last two year viz- 2022-23 in comparison to 2023-24 is as follows

Parameters	**Year (2022-23)**	**Year (2023-24)**	**CAGR % Growth**
India's edible oil (MMT)	12.42	12.8	-1.93
World edible oil production (MMT)	41.35	223.3	132.42
India's per capita availability per kg	23.5	22.3	-5.11

Source: Annual reports, Dept. of food and public distribution, GOI

In 2023-24, the Edible oil industry contributed significantly to India's Gross Value Added (GVA) with a notable share in both manufacturing and agriculture. The Edible oil sector contributes around 8.80% of GVA in manufacturing and 8.39% in Agriculture sector. In terms of exports, the industry accounted for 13% of India's total exports. Furthermore, the industry's investment represents 6% of total industrial investment. Export of oil meals, oil seeds and minor oil was about 5.44 million tonnes in the financial year 2023-24 valued at Rs. 29587 crores. India contributed about 5-6% of the world oilseed production.

The Compounding Annual Growth rate (CAGR) from 2022-23 and 2023-24 is -1.93%. As the period under consideration course only one year, the CAGR is equal to the simple annual growth rate. The negative growth indicates a marginal decline in Domestic Edible oil availability during this period.

Which may be attributed to production constraints, import adjustment, similarly, the per capita availability of edible oil recorded a negative CAGR of -5.11% over the same period, reflecting a sharper decline in per capita term. This indicates the negative growth over the one-year period of time

2. Literature Review:

Pathways and strategy for accelerating growth in edible oil toward goal of Atmanirbharta-2024: Focuses on the performance of the edible oil sector in India by examining trends in area, production and yield of major oilseeds in India and the world, and analyses the trends in the import and export of the edible oil sector. Vegetable oil economy and production problems in India by National Academy of Agricultural Sciences, New Delhi December 2017

Souvenir (2019); Growth of edible vegetable oil industry in India: which focuses on the production of oilseed and productivity in India and global production of oilseed and demand and supply of edible oil nationally and internationally. A case study on edible oil value chain in Bangladesh (2021), understanding drivers of private sector compliance to large scale food fortification. An empirical study on Brand preference towards edible oil in rural areas with special reference to Coimbatore district; it studies the consumer awareness about various brand of edible oil and also the factor influencing in buying a branded edible oil.

3. Statement of the Study

Despite being a major oilseed-producing country, India remains highly dependent on imports to meet its growing edible oil demand. Rising consumption, low domestic productivity, and exposure to global price volatility have created persistent supply imbalances in the sector. The COVID-19 pandemic further highlighted structural weaknesses in production and trade. In this context, the present study examines trends in domestic availability, per capita consumption, and import–export performance of edible oils in India using secondary data and descriptive statistical tools.

4. Objectives of the study:

The current quest has the following objectives:

4.1. To analyse the trends of edible oil production and per capita availability in India.

4.2. To study the import and export development of edible oil products of India.

5. Data collection and research methodology:

This descriptive research article uses secondary data to support its claims. They were collected from a variety of books, periodicals, newspaper articles, publications from state and union government agencies, research articles available on various websites and other internet sources. This study used descriptive statistical techniques including CAGR, Annual growth rate, Average for analysis.

6. Scope of the Study:

The scope of the present study is confined to an analysis of the Growth and Instability in India's Edible Oil Sector: Evidence from Production, Consumption and Trade.The study covers a period of ten years from 2014–15 to 2023–24, enabling an assessment of long-term trends as well as short-term fluctuations in the sector.

7. Limitation of the study:

- The study is based entirely on **secondary data** collected from government reports, published literature, and online sources. Therefore, the accuracy of the analysis depends on the reliability and consistency of these sources.
- The analysis is confined to the **national level**, and hence variations across states, regions, and individual oilseed crops are not captured in the study.
- The study employs **descriptive statistical techniques** such as averages, growth rates, and CAGR. Advanced econometric models and causal analyses have not been applied, which may limit deeper interpretation of relationships among variables.
- The study period covers **2014–15 to 2023–24**, and recent policy changes or market developments beyond this period are not included.

8. Growth In edible Oil Production and Per Capita Availability in India:

India's Edible oil sector has grown rapidly in recent decades. Domestic oilseed production has risen from 7.3 million tonnes (MMT) in 2004-2005 to roughly 11-12 MMT by 2021-22. However, demand has grown even faster per capita edible oil consumption climbed from just 8.2 Kg/year in 2001 to about 15.8 Kg/year by 2012-13, 19.7Kg by 2022-23 and nearly 23.5kg/year by 2025 this increase in consumption, as a result, India today meets only about 40 to 45% of its edible oil needs from domestic production.

Major Edible oil type production of domestic (oilseed based) is dominated by three crops: rapeseed-mustard (45% of oil output) groundnut (25%) and soybean (25%) minor oils (sunflower, sesame, safflower, nigerseed etc), contribute only 5% of domestic oil yield. Palm and coconut yield from India are small, so bulk of palm and coconut oil is imported from other source.

Consumption by type: India's largest consumed oil is palm oil (mostly imported), accounting for 37% of edible oil use, followed by soybean oil (20%) Mustard oil (14%) and Sunflower oil (13%).

Table.1 Production and per capita availability of Edible oil in India.

Edible oil Production & Per Capita Availability in India				
Year	**Domestic availability of edible oil (In MillionMetric Tonnes)**	**Annual Growth Rate of Edible oil Production (In %)**	**Per Capita Availability (per kg/person)**	**Annual Growth Rate of Per Capita Availability (%)**
2014-15	9.20	-9.72	17	4.94
2015-16	8.63	-6.2	19	11.76
2016-17	10.09	16.92	18.9	-0.53
2017-18	10.06	-0.30	19.5	3.17
2018-19	10.35	2.88	21.6	10.77
2019-20	10.65	2.90	19.8	-8.33
2020-21	11.15	7.73	19.7	-0.51
2021-22	11.65	4.48	21	6.6
2022-23	12.42	6.62	23.5	11.9

2023-24	12.18	-1.94	22.3	-5.11

Source: Annual report, Dept. of food and public distribution.

The above table depicts the average edible oil output for the last ten years at the national level. From the above table, it is understood that the average production of edible oil at the national level is 10.638 million metric tonnes (min=8.63 and max=12.42) in the last ten years. The average per capita availability of edible oil for the last ten years was 20.23 kg/annum (min=17and max=23.5).The domestic availability of edible oil in India exhibited a generally upward trend during the study period from2014-15 to 2023-24. It increased from 9.20 MMT in 2014-15 to 12.8 MMT in 2023-24, registering a cumulative growth of approximately 39.1% over the period. Correspondingly, per capita availability of edible oil also showed an overall improvement, indicating rising consumption levels and changing dietary patterns. However, the growth trajectory was not uniform across all years. The period around 2020-21 witnessed noticeable fluctuations due to the COVID-19 pandemic, which disrupted oilseed production, processing activities, supply chains, and imports. Despite these temporary setbacks, the sector demonstrated resilience in the post-pandemic phase, supported by policy interventions, improved domestic production, and demand recovery reflects the gradual strengthening of the edible oil sector, though continued efforts are required to address supply gap and enhance self-reliance.

9. Export And Import of Edible Oil in India:

India is one the largest consumer and importer of edible oil in the world. Due to limited domestic production and rising consumption, the country is significantly dependent on imports to meet its edible oil needs to reduce this dependency the GOI imposes restrictions on imports and ban on exports and GOI periodically adjusting the import duties to balance the domestic supply and protect local producers.

Table.2: Export and Import of edible oil.

Year	Export		Import	
	Quantity (in LMT)	Value (Rs. In crores)	Quantity(in LMT)	Value (Rs.In crore)
2014-15	0.42	580.13	144.2	60000
2015-16	0.31	522.94	148.7	69331.96
2016-17	0.60	779.97	150.8	75125
2017-18	0.37	566.04	145.1	66742
2018-19	0.50	744.58	149.1	62933
2019-20	0.74	819.15	145.1	156800
2020-21	3.02	4453.1	131.3	117225
2021-22	0.98	1650	140.3	156800
2022-23	2.01	3536.27	164.7	138424
2023-24	2.13	3499.92	156.9	131967

Source: Annual report, Dept. of food and public distribution,DGCIS

The above of table shows that India's edible oil exports, which had remained modest at less than 1 LMT until 2019–20, registered a remarkable increase during 2020–21, rising to 3.02 LMT with an export value of ₹ 4,453 crore. This sudden surge coincided with the COVID-19 pandemic and can be attributed to changes in global and domestic trade dynamics. Reports indicate that during the pandemic, India shifted towards importing more crude edible oils for refining within the country, as refined oil imports faced restrictions and logistical challenges (FoodNavigator-Asia, 2020). This shift not only increased the utilization of local refining capacity but also created limited opportunities for exports. Furthermore, supply chain disruptions, labour shortages, and high international prices influenced edible oil demand and trade patterns, resulting in reduced imports but stronger export performance in certain segments (Reuters, 2021). Hence, the COVID period marked a temporary restructuring of India's edible oil trade, exposing vulnerabilities in import dependence while simultaneously opening up avenues for domestic processing and exports. The analysis of Table 2 highlights that India's edible oil imports have remained consistently high, fluctuating between 131 and 165 LMT across the last decade. However, the value of imports has shown sharp volatility, largely influenced by international price movements and government policy interventions. Recent news reports support this trend, noting that India's edible oil imports in February 2025 plunged to a four-year low due to reduced soyoil and sunflower oil purchases, leading to inventories falling to their lowest in three years (Reuters, 2025a). To stabilize supplies and consumer prices, the government halved the basic customs duty on crude edible oils to 10 percent in May 2025, a move described as a "win-win situation" for both refiners and consumers (Reuters, 2025b). Similarly, the government extended the lower import duty regime until March 2025 to contain local inflation (Reuters, 2024). Market dynamics also play a significant role; for instance, refiners increased palm oil imports once its global price fell below that of soya oil (Reuters, 2025c). These developments indicate that while India continues to depend heavily on edible oil imports, the quantity and value are highly sensitive to global price shifts and domestic policy changes.

10. RESULTS AND DISCUSSION:

The data presented in the table reveal the trends in domestic availability and per capita availability of edible oil in India during the period from 2014–15 to 2023–24. Domestic availability of edible oil increased from 9.20 million metric tonnes in 2014–15 to **12**.18 million metric tonnes in 2023–24, indicating a gradual expansion over the study period. Despite this overall upward trend, the annual growth rates exhibit considerable fluctuations, with negative growth observed in certain years such as 2014–15, 2015–16, 2017–18, and 2023–24**.** The compound annual growth rate (CAGR) of 2.85 per cent reflects a moderate long-term growth in domestic availability. The relatively low coefficient of variation **(**CV = 0.116**)** suggests that domestic availability remained reasonably stable over time. The distribution is nearly symmetrical, as indicated by marginal negative skewness, while negative kurtosis reflects the absence of extreme fluctuations.

Table 3: Descriptive study

Year	**Domestic availability of edible oil**	**Annual growth rate (%)**	**Per capita availability of edible oil**	**Annual growth rate (%)**
2014-15	9.2	-9.2	17	4.94
2015-16	8.63	-6.2	19	11.76
2016-17	10.09	16.92	18.9	-0.53
2017-18	10.06	-0.3	19.5	3.17

2018-19	10.35	2.88	21.6	10.77
2019-20	10.65	2.9	19.8	-8.33
2020-21	11.15	4.69	19.7	-0.51
2021-22	11.65	4.48	21	6.6
2022-23	12.42	6.61	23.5	11.9
2023-24	12.18	-1.93	22.3	-5.11
Average	**10.638**	**2.085**	**20.23**	**3.466**
SD	**1.231844146**	**7.243173414**	**1.89035564**	**7.069680489**
CV	**0.115796592**	**3.473944084**	**0.093443185**	**2.039723165**
Skewnees	**-0.07099924**	**0.477268857**	**0.171357436**	**-0.316293074**
Kurtosis	**-0.775611149**	**1.223681185**	**-0.045256841**	**-1.017922726**
CAGR	**0.028456544**		**0.027508904**	

Sources : Annual report, Dept. of food and public distribution,DGCIS

The annual growth rate of domestic availability averaged 2.09 per cent, but the high standard deviation (7.24) and coefficient of variation (3.47) indicate significant year-to-year volatility. Positive skewness and leptokurtic distribution highlight occasional sharp increases, particularly during 2016–17, suggesting sensitivity to production conditions, import dependence, and policy interventions.

Per capita availability of edible oil increased from 17 kg per person in 2014–15 to 22.3 kg per person in 2023–24, signifying improved access to edible oils over the decade. The CAGR of 2.75 per cent confirms a consistent long-term rise in per capita availability. The average per capita availability stood at 20.23 kg, with a low coefficient of variation (0.093), indicating a relatively stable consumption pattern. Slight positive skewness and near-normal kurtosis suggest a well-balanced distribution without extreme deviations. However, the annual growth rate of per capita availability shows pronounced fluctuations, with an average growth rate of 3.47 per cent and a high coefficient of variation (2.04). Negative growth during 2019–20 and 2020–21 reflects the adverse impact of the COVID-19 pandemic, which disrupted supply chains, reduced household incomes, and altered consumption behaviour. The negative skewness in growth rates indicates a greater frequency of contraction years compared to expansion years.

Overall, the analysis indicates that while both domestic availability and per capita availability of edible oil in India have improved steadily over the long term, short-term growth remains volatile. The COVID-19 period particularly exposed the sector's vulnerability to external shocks. These findings underline the need for policy measures aimed at strengthening domestic production, stabilising supply chains, and reducing dependence on imports to ensure sustained growth and food security.

Table 4: Descriptive statistics of imports and exports:

Years	**Imports**	**Values**	**Exports**	**Values**
2014-15	144.2	60000	0.42	580.13
2015-16	148.7	69331.96	0.31	522.94
2016-17	150.8	75125	0.6	779.97
2017-18	145.1	66942	0.37	566.04
2018-19	149.1	62933	0.5	744.58
2019-20	145.1	156800	0.74	819.15

2020-21	131.3	117225	3.02	4453.1
2021-22	140.3	156800	0.98	1650
2022-23	164.7	138424	2.01	3536.27
2023-24	159.6	131967	2.13	3499.92
Average	**147.89**	**103554.8**	**1.108**	**1715.21**
SD	**9.382661**	**40479.34**	**0.939749**	**1514.815**
CV	**0.063444**	**0.390898**	**0.848149**	**0.883166**
Skewness	**0.216206**	**0.226141**	**1.196159**	**1.003711**
kurtosis	**0.676369**	**-2.03204**	**0.212476**	**-0.81373**
CAGR	**0.011338**	**0.091528**	**0.197699**	**0.221029**

Interpretation:

The table presents trends in the imports and exports of edible oil**,** along with their corresponding values, for the period 2014–15 to 2023–24. During the study period, edible oil imports remained consistently high, reflecting India's continued dependence on imports to meet domestic demand. Import volumes increased from 144.2 units in 2014–15 to 159.6 units in 2023–24, registering a compound annual growth rate (CAGR) of 1.13 per cent, which indicates a marginal but steady rise in import quantity over the decade.

In contrast, the value of imports showed a much sharper increase, rising from ₹60,000 crore in 2014–15 to ₹1,31,967 crore in 2023–24**,** with a CAGR of 9.15 per cent. The high standard deviation and coefficient of variation **(**CV = 0.39**)** point to substantial volatility in import values, largely driven by fluctuations in international prices, exchange rates, and global supply disruptions. The pronounced spike during 2019–20 and 2021–22 highlights the impact of global market instability and pandemic-related supply shocks.

Exports of edible oil, though relatively small in volume, exhibited a noticeable upward trend. Export quantities increased from 0.42 units in 2014–15 **to** 2.13 units in 2023–24**,** recording a CAGR of 19.77 per cent**,** indicating rapid growth from a low base. However, the high coefficient of variation **(**CV = 0.85**)** and positive skewness suggest considerable year-to-year instability in export volumes. A significant rise in exports during 2020–21 reflects favourable international prices and temporary surplus availability.

Similarly, the value of exports increased substantially from ₹580.13 crore in 2014–15 to ₹3,499.92 crore in 2023–24, registering a CAGR of 22.10 per cent. The high variability in export values **(**CV = 0.88**)** indicates sensitivity to price changes in the global edible oil market. Positive skewness and platykurtic distribution further suggest that export earnings were influenced by occasional high-value export years rather than steady growth.

Overall, the analysis reveals that while India's edible oil imports have grown slowly in quantity, their value has risen sharply, underscoring increasing import dependence and exposure to international price volatility. On the other hand, exports, though growing at a faster rate, remain limited and unstable. The findings highlight the structural imbalance in India's edible oil trade and emphasise the need for policy interventions aimed at enhancing domestic oilseed production, improving processing capacity, and reducing vulnerability to global market fluctuations.

10. Conclusion

The study reveals that India's edible oil sector has recorded moderate long-term growth in domestic availability and per capita consumption during the study period. However, this growth has been uneven and volatile, with persistent import dependence exposing the sector to global price fluctuations and supply shocks. The COVID-19 pandemic further highlighted structural weaknesses in production and supply chains. Despite some improvement in exports, their scale remains limited and unstable. Strengthening domestic oilseed production, improving productivity, and reducing reliance on imports are essential for achieving sustainable growth and self-reliance in the edible oil sector.

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