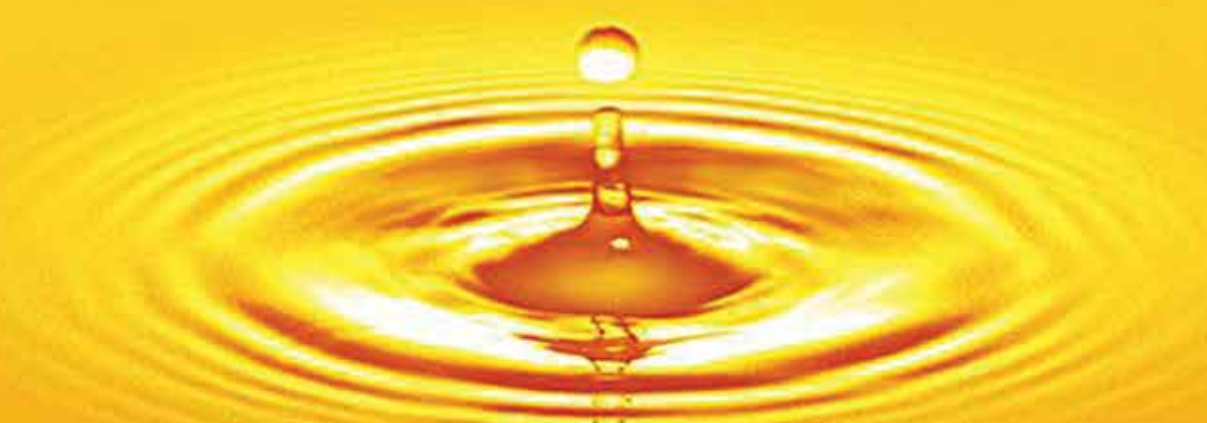




# SOUVENIR 2022

WORKING TOWARDS NATIONAL MISSION ON OILSEEDS



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PIYUSH GOYAL



वाणिज्य एवं उद्योग,  
उपभोक्ता मामले, खाद्य और सार्वजनिक  
वितरण तथा वस्त्र मंत्री, भारत सरकार  
MINISTER OF COMMERCE & INDUSTRY,  
CONSUMER AFFAIRS, FOOD & PUBLIC DISTRIBUTION AND  
TEXTILES, GOVERNMENT OF INDIA



#### MESSAGE

I am delighted to learn that Indian Vegetable Oil Producers' Association (IVPA) is organising 'IVPA Global Roundtable on Veg Oil and Oilseed Sector' on 18<sup>th</sup>-19<sup>th</sup> November, 2022 in Hyderabad. The roundtable will also see the release of a souvenir with the theme of 'Working towards national mission on oilseeds' to celebrate this occasion.

It is a matter of great pride that despite the challenges of rising international competition, India's farmers are increasingly engaging in production while its entrepreneurs are relentlessly pursuing higher export goals for oilseeds. Augmenting India's domestic production of oils and oilseeds becomes paramount given India's ever-growing demand for edible oils.

I am confident that IVPA Global Roundtable will provide an opportunity to explore ways for sustainable growth of edible oils and oilseed production while ensuring safe and healthier edible oils for all Indian citizens. I convey my best wishes to IVPA for the success of this roundtable and the souvenir and wish IVPA grand success in their future endeavours.

Piyush Goyal





साध्वी निरंजन ज्योति  
SADHVI NIRANJAN JYOTI



उपमोक्ता मामले,  
खाद्य और सार्वजनिक वितरण एवं  
ग्रामीण विकास राज्य मंत्री  
भारत सरकार  
MINISTER OF STATE FOR  
CONSUMER AFFAIRS, FOOD AND PUBLIC DISTRIBUTION &  
RURAL DEVELOPMENT  
GOVERNMENT OF INDIA



### MESSAGE

I am glad to know that the Indian Vegetable Oil Producers' Association (IVPA) is organising "IVPA Global Roundtable on Veg Oil and Oilseed Sector" on 18<sup>th</sup> & 19<sup>th</sup> November, 2022 at Hyderabad and shall be releasing IVPA Souvenir 2022 on the theme "Working towards national mission on oilseeds" comprising of papers contributed by eminent scholars.

It is high time to make India to make India self-sufficient in cooking oils, including palm oil and reduce the dependence on imports. I hope the industry association and its members shall deliberate during this global event on the sustainable production of oilseeds and in making India self-sufficient in edible oil and oilseeds.

I convey my best wishes to IVPA organisers and its participants for the event and the souvenir.

  
(Sadhvi Niranjana Jyoti)



साध्वी निरंजन ज्योति  
SADHVI NIRANJAN JYOTI



सत्यमेव जयते

उपमोक्ता मामले,  
खाद्य और सार्वजनिक वितरण एवं  
ग्रामीण विकास राज्य मंत्री  
भारत सरकार  
MINISTER OF STATE FOR  
CONSUMER AFFAIRS, FOOD AND PUBLIC DISTRIBUTION &  
RURAL DEVELOPMENT  
GOVERNMENT OF INDIA

75  
आज़ादी का  
अमृत महोत्सव



संदेश

मुझे यह जानकर खुशी हो रही है कि इंडियन वेजिटेबल ऑयल प्रोड्यूसर्स एसोसिएशन (आई.वी.पी.ए) 18 और 19 नवंबर, 2022 को हैदराबाद में "वनस्पति तेल और तिलहन क्षेत्र पर आई.वी.पी.ए. वैश्विक गोलमेज सम्मेलन का आयोजन कर रहा है और 'आईवीपीए स्मारिका-2022' जारी कर रहा है जोकि 'तिलहन पर राष्ट्रीय मिशन की दिशा में काम करना" विषय पर आधारित है, जिसमें इस क्षेत्र के प्रख्यात विद्वानों द्वारा किए गए योगदान शामिल हैं।

भारत को 'पाम ऑयल' सहित खाद्य तेल के क्षेत्र में आत्मनिर्भर बनाने और आयात पर निर्भरता को कम करने का समय आ गया है। मुझे उम्मीद है कि इस वैश्विक आयोजन के दौरान तिलहन के सतत उत्पादन और भारत को खाद्य तेल और तिलहन क्षेत्र में आत्मनिर्भर बनाने के लिए उद्योग संघ और उसके सदस्य विचार-विमर्श करेंगे।

मैं आई.वी.पी.ए. आयोजकों और इसके प्रतिभागियों को इस कार्यक्रम और स्मारिका के लिए अपनी शुभकामनाएं देती हूं।

साध्वी निरंजन ज्योति  
(साध्वी निरंजन ज्योति)





आज़ादी का  
अमृत महोत्सव  
सोम प्रकाश, भा.प्र.सो. (से.नि.)  
SOM PARKASH, I.A.S. (Retd.)  
सोम प्रकाश, आई.ए.एस. (रिटा.)



## MESSAGE

राज्य मंत्री  
वाणिज्य एवं उद्योग मंत्रालय  
भारत सरकार  
Minister of State  
Commerce & Industry  
Government of India



I am glad to know that the Indian Vegetable Oil Producers' Association (IVPA) is organising "IVPA Global Roundtable on Veg Oil and Oilseed Sector" on 18<sup>th</sup> & 19<sup>th</sup> November, 2022 and shall be releasing IVPA Souvenir 2022 on the theme "**Working towards National Mission on Oilseeds**" comprising of papers contributed by eminent scholars.

India is one of the largest producers of oilseeds in the world but more than 60% of domestic demand of edible oils is met through imports. Thus, there is a need to work towards self-sufficiency in a sustained manner while ensuring safe and healthier edible oils for the masses. I hope the industry association and its members shall deliberate on ways and means of increasing the sustainable production of oilseeds and in making India "Atmanirbhar".

I convey my best wishes to IVPA and its participants to make the event a grand success.



  
(SOM PARKASH)

#startupindia

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Residence : Bungalow No. 7, Lodhi Estate, New Delhi-110003  
E-mail : mos-dpiit@gov.in, somparkash.mos@gmail.com



अनुप्रिया पटेल  
ANUPRIYA PATEL



**MESSAGE**

वाणिज्य एवं उद्योग राज्य मंत्री  
भारत सरकार  
Minister of State for Commerce & Industry  
Government of India



I am happy to learn that the **Indian Vegetable Oil Producers' Association (IVPA)** is organizing the '**IVPA Global Roundtable on Veg Oil and Oilseed Sector**' on 18th November 2022. On this occasion, it will be releasing "**IVPA Souvenir 2022**" on the Theme "**Working towards national mission on oilseeds**".

The Government of India is committed to taking proactive steps to grow domestic production of oil seeds in the country and eventually achieve self-reliance in this area. It is a matter of pleasure to note that the Association is striving towards achieving the goal of Atmanirbhar Bharat, 'a vision of new India' in this direction.

I hope that "IVPA Souvenir 2022" will promote innovative thoughts on developing oilseed crops with the adaptation of Good Agriculture Practices (GAP), which in turn shall enable the nation to seek the vision of self-reliance in the field of oil seeds and edible oils.

I express my best wishes to IVPA for the success of the event.

  
(Anupriya Patel)

11.11.2022  
New Delhi





**K. TARA KAMA RAO**

Minister for Municipal Administration &  
Urban Development, Industries &  
Commerce, Information Technology,  
Electronics & Communications  
Government of Telangana



3rd Floor, DT&CP Bhavan,  
Telangana MA&UD Campus,  
A.C. Guards, Hyderabad - 500004.

Date: .11.2022

**MESSAGE**

I am happy to learn that the Indian Vegetable Oil Producers' Association (IVPA) is organising "IVPA Global Roundtable on Veg Oil and Oilseed Sector" on 18-19th November, 2022 at Hyderabad and to celebrate will be releasing a Souvenir on the theme "Working towards national mission on oilseeds".

The domestic consumption of edible oils in India has been outstripping the production and the gap between the two is quite significant which is being met by imports. Thus, it is desirable to increase domestic oil seeds production to reduce import dependency in an uncertain geopolitical environment.

I hope the event, 'IVPA Global Round Table on Veg-Oil and Oilseed Sector' will discuss emerging issues and challenges in the edible oil and oilseed sector and will be able to orient the Indian vegetable oil industry towards self-sufficiency and sustainable production in the country.

I extend my best wishes to all the organisers for this grand event.

**(K. TARA KAMA RAO)**

To  
**The President,**  
Indian Vegetable Oil Producers' Association,  
New Delhi.



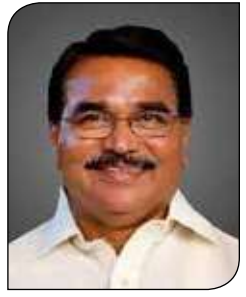


**SINGIREDDY NIRANJAN REDDY**  
Minister for Agriculture,  
Co-operation & Marketing  
Government of Telangana.



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Minister's Quarters, Road No.12,  
Banjara Hills, Hyderabad - 34.  
Phone: 040 -2956 9119 / 2331 0813



MESSAGE

I am pleased to note that the Indian Vegetable Oil Producers' Association (IVPA) is organising its "*IVPA Global Roundtable on Veg Oil and Oilseed Sector*" at Hyderabad on 18-19<sup>th</sup> November, 2022 and to commemorate the occasion publishing a Souvenir on the theme "**Working towards national mission on oilseeds**".

The theme of the souvenir is of great relevance in the present scenario of ever-growing demand for edible oils. We need to intensify efforts to increase yield of oilseed crops.

I am sure that the deliberations during the IVPA Global Roundtable on Veg Oil and Oilseed Sector will focus on measures for making India self-sufficient in oilseeds production and in increasing the farmer income.

I convey my best wishes to all the organisers and participants of the IVPA Global Roundtable.

A handwritten signature in green ink, appearing to read "Niranjan Reddy".

[S. NIRANJAN REDDY]



75  
आज़ादी का  
अमृत महोत्सव

सुधांशु पाण्डेय  
सचिव  
SUDHANSHU PANDEY  
SECRETARY



भारत सरकार  
खाद्य एवं सार्वजनिक वितरण विभाग  
उपमोक्ता भगते, खाद्य और सार्वजनिक वितरण मंत्रालय  
कृषि भवन, नई दिल्ली-110 001  
GOVERNMENT OF INDIA  
DEPARTMENT OF FOOD & PUBLIC DISTRIBUTION  
MINISTRY OF CONSUMER AFFAIRS  
FOOD AND PUBLIC DISTRIBUTION  
NEW DELHI-110 001  
Tel.: 011-23382349, Fax : 011-23386052  
E-mail secy@food@nic.in

Dated: 18<sup>th</sup> August, 2022



### MESSAGE

I am pleased to note that the 'Indian Vegetable Oil Producers' Association', is releasing IVPA Souvenir 2022 on its 45<sup>th</sup> Annual Session at New Delhi. I am also happy to know that a Souvenir on the theme "WORKING TOWARDS NATIONAL MISSION ON OILSEEDS" comprising of articles contributed by eminent national and international experts from the edible oil sector is being released on this occasion.

2. India being one of the largest consumers of edible oils has to rely on the imports to meet the domestic demand. Therefore, decreasing the dependence on imports is the need of the hour. Indian agriculture has made considerable progress since Independence, particularly with respect to production of food crops, such as wheat and rice. However, in the area of oilseeds production much ground needs to be covered. India has the potential to increase domestic production of oilseeds, which could reduce dependence on imports and also benefit Indian farmers, therefore, strong convergence and policy coordination with States and various stake holders would be needed. A wide range of oilseed crops are grown in different agro-climatic regions of the country, which include groundnut, soyabean, and rapeseed-mustard, besides, sesamum, sunflower and safflower. The goal can be achieved with the adaptation of right technology and farming practices. I am sure that this Souvenir will throw up new ideas and scope for decreasing the import dependence and also create necessary awareness among its readers to boost domestic production to make India 'Atmanirbhar' in edible oils.

3. I convey my best wishes to IVPA and participants to make the event a grand success.

  
—(Sudhanshu Pandey)—



**MANOJ AHUJA**  
**SECRETARY**



सत्यमेव जयते



भारत सरकार  
कृषि एवं किसान कल्याण मंत्रालय  
कृषि एवं किसान कल्याण विभाग  
Government of India  
Ministry of Agriculture & Farmers Welfare  
Department of Agriculture & Farmers Welfare

It is heartening that Indian Vegetable Oil Producers Association (IVPA) is holding Global Roundtable 2022 on Veg Oil and Oilseed Sector on 18<sup>th</sup> -19<sup>th</sup> November 2022 in Hyderabad. The event will see participation of edible oil experts, researchers, technologists and industry players discussing key market dynamics in edible oil sector. IVPA will also be bringing out its annual publication, "Souvenir 2022" on the theme, "Working Towards National Mission on Oilseeds". It will include valuable articles on oilseeds by renowned national and international experts.

The government priority is on attaining self sufficiency in edible oils by increasing production of oilseeds and oil palm by increasing domestic availability of edible oils. Due to various policy interventions, oilseeds production has shown a growth of 52% from 25.25 million tonnes in 2015-16 to 37.70 million tonnes in 2021-22. Special Mustard programme initiated in Rabi 2020-21 has given most spectacular results. Mustard production has jumped by 29% from 91.24 to 117.54 lakh tonnes in the last 2 years.

The focus on edible oilseeds will increase edible oilseeds production by 44% from current level of 37.70 million tonnes to 54.10 million tonnes in 2025-26. Similarly, production of edible oils will increase from 8.37 million tonnes in 2019-20 to 13.60 million tonnes in 2025-26. The Government has drawn long term strategy of increasing area through special projects and crop diversification and productivity enhancement through introduction of HYVs and adoption of suitable agronomic practices in major oilseed growing states.

To further augment domestic availability of edible oils, Government has launched a National Mission of Edible Oils - Oil Palm (NMEO-OP) with an outlay of Rs 11,040 crore for promoting oil palm cultivation in the country. This Mission will bring additional area of 6.5 lakh ha under Oil Palm plantation and increase CPO production from 0.37 to 1.12 million tonnes in next 5 years.

It is hoped that deliberations at the Global Roundtable will help in developing strategies for enhancing edible oilseeds production and reducing import dependency. The team of IVPA deserves appreciation for organizing this important global event at Hyderabad involving all stake holders.

I wish great success to the IVPA Global Roundtable Conference.

  
(Manoj Ahuja)

November 16, 2022







YB Larry Soon  
Chairman  
Malaysian Palm Oil Council (MPOC)  
Malaysia



### Message

I am delighted to say a few words in conjunction with the 45<sup>th</sup> Annual Session of IVPA themed “**WORKING TOWARDS NATIONAL MISSION ON OILSEEDS**”.

India remains an important destination for palm oil exports from Malaysia with two thirds of the demand met by imports. India imports 60% of its edible oil requirements. India’s total import of palm oil is estimated at about 8 to 8.5 million tonnes of which Malaysian Palm oil accounts for around 60-65% of the total imports.

The Russia Ukraine war has created a huge void in global vegetable oil supply which will be difficult to fill in the near future. Essential food items across board have witnessed inflationary pressure. One year after the supply chains and global trade was halted because of COVID-19 outbreak, FAO food price index had increased 32%. During this time, vegetable oils prices had increased 100% (or doubled). But there has been no respite even after global trade resumed.

Although the crisis has amplified the cost pressures and supply disruptions across the world, Malaysia has continued to remain as a trusted partner meeting the needs of Indian edible oil requirements. This was due to the stable and consistent policy by Malaysia which helped to meet India’s edible oils demand.

As the most widely used vegetable oil, there will always be demand for palm oil. Globally, it is one of the largest produced, traded and consumed oils. In India, the surge in the demand for palm oil is directly linked to the increased demand from the processed food industry as it provides the ideal requirements like versatility and stability, along with price competitiveness and improved shelf-life, making it an ideal ingredient for these industries.

I am pleased to note that the memorandum of understanding (MOU) recently signed between IVPA and the Malaysian Palm Oil Council (MPOC) at MIACES 2022 in Malaysia will further strengthen the cooperation between Malaysia and India in order to ensure a healthy bilateral trade between the two countries and help to enhance our collaboration in promoting Malaysian palm oil.

My best wishes to IVPA and all participants for a successful event.

A handwritten signature in black ink, appearing to read 'LARRY SOON', is written over a white background.

(LARRY SOON)







Wan Aishah Wan Hamid  
Chief Executive Officer  
Malaysian Palm Oil Council



### MESSAGE

I am pleased to learn that IVPA is coming out with its Annual Souvenir 2022.

The theme for this Souvenir, 'Working Towards National Mission on Oilseeds' is very opportune to achieve the ambitions of the nation of moving towards self sufficiency in edible oils requirement. India being one of the largest buyers of Malaysian Palm oil, there would be enormous opportunities to find areas of mutual interest. As recently announced by the Honorable Minister of Plantation Industries & Commodities, Malaysia is committed to continue to help in the cause of palm oil in other countries also using the specialization achieved in various aspects of palm oil including Research and Development and Sustainable Agri sector growth.

The MOU signed between IVPA and MPOC recently is very timely and Malaysia will be happy to offer any required assistance to fulfill these aspirations. IVPA is an important and well recognized Industry Association, and I am confident IVPA is well placed to support the National Mission for Edible oils working seamlessly with all the stake holders with a progressive mindset. Palm oil with its contribution to the GDP and the lives of the farming community, offers almost ubiquitous utility in various FMCG products and acts as an anchor to the price table, especially in Asia and the same is possible due to efficient use of the natural resources. Malaysia has been implementing the sustainable practices which can be replicated in other countries for responsible and sustainable growth of palm oil. However, palm oil often is misconstrued, and certain myths are created to denigrate the role of palm oil and thereby, a positive promotion of palm oil is necessary keeping a long-term edible oil security needs in focus. In this context, we applaud the constant support from India not only for being a natural destination for palm oil but also for declaring a grand Oil Palm mission to encourage and grow oil palm in India.

We at MPOC believe that there is a significant role for international co-operation, continuous dialogue, and mutual co-option by working with various stake holders for sustainable growth in the palm oil sector and that's what we have been doing in various markets across the globe.

Best Wishes to IVPA

Wan Aishah Wan Hamid



## Message from the IVPA President's desk

Dear Friends,

It has been a tumultuous year of huge complexity with many big events and there by huge volatility in the Veg oils and oilseed sector in India. High oil and oilseed prices which otherwise would be a great stimulus for increased production became a challenge in terms of managing the consumer inflation. At a time when Covid affected the incomes negatively, the soaring prices created some kind of "K" shape movement in the market place creating a divergence between prices of essential commodities and the consumer affordability which is evident from the actions that various Governments are compelled to take to douse the price rally. The edible oil inflation was mainly due to Ukraine Crisis, export taxes and export ban by certain producing countries, labour shortage, drop in production and other non-tariff barriers coupled with huge supply chain disruptions. The high prices reduced the demand, hence, the import of India reduced by a whopping 2 million tons per annum compared to 17-18 MT during the oil year.

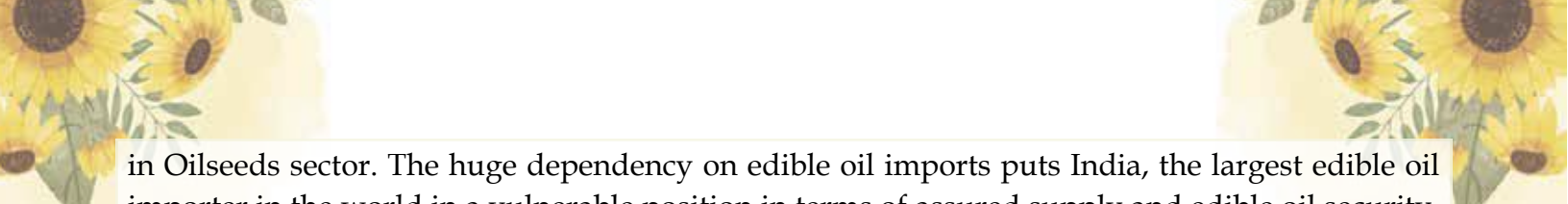


Indian Government took various bold decisions some of which are steep reduction in duties, stock controls, stoppage of domestic commodity exchanges, allowing import of refined oils, issuance of TRQ (Tariff Rate Quota at zero duties) and close and constant dialogue with the industry for price control measures.

Fortunately, the prices have fallen steeply since then and in the main producing countries like Indonesia where in quickly the problem shifted from Lack supply to excessive and desperate need to find destination market of the burdensome stocks of palm oil during June-October 22. Hence palm oil and consequently other oil prices dropped nearly 40-50 percent after the period of life time high prices seen during the year and thankfully now the markets are in a consolidation phase. Currently, the palm oil prices are a steep discount of about 450 dollars per ton offering some relief to the consumers at large especially the HORECA segment which uses about over 70 percent oil Palm oil.

In the process a few good things emerged. To start with the Government and Industry started seamless interaction, in which IVPA played a very important role of translating the industry challenges and at the same time understanding the Consumer driven Government concern on price table. Thankfully the Industry played a huge role in making supply chain happen despite all odds viz. huge freight rate hikes, doubling of the working capital needs and also quadruple increase in the price risk. The daily volatility of the market prices was many times higher than the margin in the business and Industry could explain all these challenges to arrive at a balanced approach in terms taking care of the needs of various stakeholders i.e. consumers, farmers, Industry, Treasury and the Allied sector. Going ahead, IVPA has suggested a stable and strategic dynamic duty policy wherein the Indian duties can be adjusted dynamically to the global price trends, while taking care of the MSP needs of the farmers and the MRP needs of the consumers.

Indian Government has embarked on a great mission of making "Atmanirbhar" Bharat especially

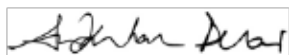


in Oilseeds sector. The huge dependency on edible oil imports puts India, the largest edible oil importer in the world in a vulnerable position in terms of assured supply and edible oil security. The vision of Oil Palm has finally been put into a meticulously planned implementation phase. Further, we believe Government will soon come out with national mission on entire oilseed sector to provide right impetus to the domestic cultivation of all oilseeds to drive import substitution happen strategically.

For making consistent improvement a regular dialogue is required with inclusive approach for identification of the problems, finding solution and way forward should continue to be a focus area to handle the 2.5 lakh crore Industry in which IVPA will continue to play an important role finding way forward.

IVPA wishes you all a happy time ahead, as the worst seems to be over and as we know opportunities galore after every crisis.

Yours sincerely,



Sudhakar Desai

President





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# SELF RELIANCE IN EDIBLE OILS: THE BUILDING BLOCKS

**SIMMARPAL SINGH**

Oil Palm Mission and GM Mustard aided with a Consistent Import Duty regime on Imported Oils can boost domestic output of Oils and cut dependence on Imports thereby reducing the dollar outflow.



India is the second largest edible oil market, after China, consuming approximately 21 million tons of edible oil each year. To cater to this annual demand, the Indian local production supplies 7-8 million tons (32-34%), which needs to be supplemented by importing 13-14 million tons (66%-68%) from other countries. This makes India the world's Number one importer of edible Oils leading to huge outflow of dollars which according to estimates ran up to approximately \$ 18.2 billion last year.

Table: Total Imported Oils Volume as a percentage of Indian Demand

Year	Consumption	Domestic Production	Imports Volume	Imports %	Import Value
2017	21.6	7.3	14.3	68%	\$10.9 bn
2018	22.3	7.0	15.3	69%	\$11.6 bn
2019	21.0	7.1	13.2	63%	\$9.9 bn
2020	20.4	7.5	12.9	63%	\$9.9 bn
2021	21.2	7.4	14.2	67%	\$18.2 bn

All Data in million metric tons | Internal Estimates |

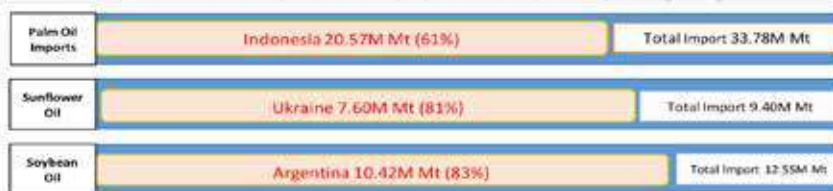
Table: Breakup of the imported Oils basket

Yr / Period	Crude Palm Oil Volume	Crude Soybean Oil Volume	Crude Sunflower Oil Volume	Total
2017-18	8.69	3.11	2.51	14.3
2018-19	9.73	3.09	2.47	15.3
2019-20	7.17	3.47	2.47	13.1
2020-21	8.20	2.87	1.96	13.0
2021-22	8.49	4.35	1.88	14.7

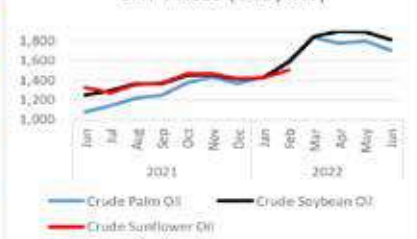
All Data in million metric tons | Internal Estimates |

According to a 2018 research report by Rabobank, this 21m metric tons of annual consumption currently, is going to grow at a CAGR of 3 percent and cross 34m metric tons by 2030, on the back of growing population, economic growth and rising disposable income in India. If nothing is done to improve the stagnant local vegetable oil supply, we will need to import almost 25m metric tons of oil by 2030. At that point, this would roughly imply a 73% dependency on imports. This makes it a food security concern worth scrambling for right now. And what adds to seriousness is the fact that we are dependent for a disproportionately large share of each of our imported oils on single countries.

Last 4 years Cumulative Imports & the Disproportionate Dependency on Single Origins.



CNF Prices (USD/MT)



This problem reared its ugly head during the last 7 months; first the Russia Ukraine war which led to stoppage of sunflower oil from Ukraine and more recently the ban by Indonesia on its Palm Oil exports. These two events led to a price rally by more than 50% in the last 6 months impacting both the dollar outflow and the consumers. The Edible Oil Refining Industry also was hard pressed trying to handle price volatility and the steep increase in the working capital requirements on one

side, and struggling on the other, to keep the refineries running through the paltry supply source of alternate origins. Hence it is utmost important that an integrated milestone-based approach is adopted to tackle these issues. While strengthening bilateral and multilateral relationships with the main & alternate countries for import is one aspect, leapfrogging the domestic production is the other driver for securing our Food needs.

## **THE DIPLOMATIC LEADERSHIP**

Topmost priority should be to strengthen the diplomatic relationship and finalize win-win agreements with the countries/trade blocks which form the supply source today, and those that can grow as alternate supply sources in immediate term, for e.g., Argentina and Mercosur for Soybean and Sunflower Oils & Malaysia for Palm Oil. While bilateral agreements are easier but getting multiple countries in a trade block to agree to a host of items to be included in the FTA scope may be an excruciating process. A staggered approach to secure food security first & other items included later could probably help achieve a faster closure on this.

## **THE FIRST BUILDING BLOCK: OIL PALM MISSION**

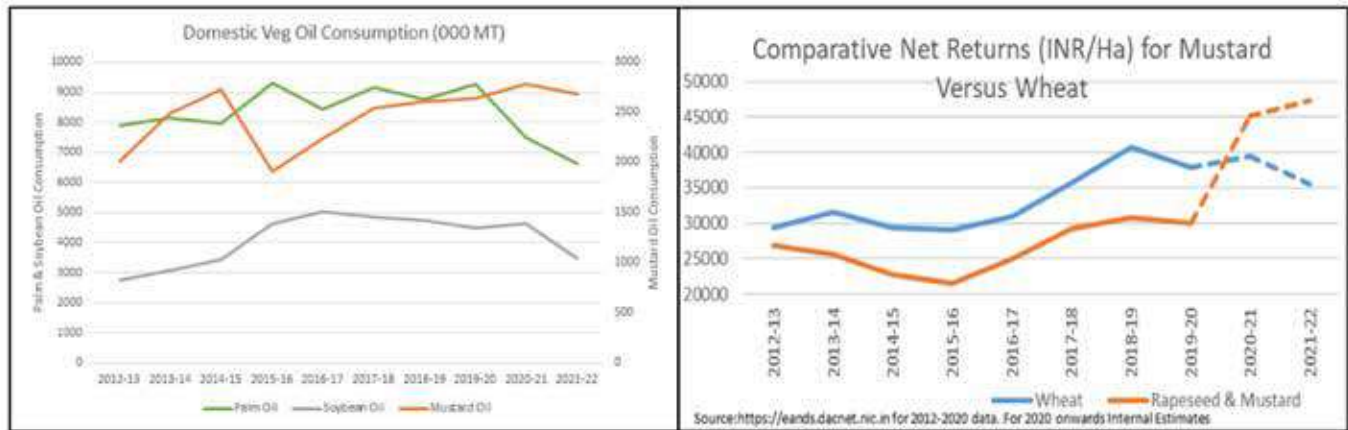
Next would be strengthening our domestic production of oilseeds. And hence the previously launched Oil Palm Mission by our honorable PM deserves accolades. It is intended to start yielding 1.1 million tons of Palm Oil by 2026 and 2.8 million tons by 2030. A small step looking at the magnitude of the expected imports of 25m tons in 2030, but nevertheless a great start towards self-reliance. The Government has shown its intent by committing 80% of the overall approved cost of 11,040 crores for the mission, while States need to take care of the balance 20%. It is important that the States work on the submitted proposals and help execute them on high priority. Whatever additional needs to be done from a policy stand point to fast track sizeable investment from the private sector into the upstream Palm Plantations should also be done. That will be big enabler in increasing the size of the locational output and provide the scale for attracting subsequent investments into the processing and supply chain infrastructure.

## **THE SECOND BUILDING BLOCK: MUSTARD**

With 10-15% of the projected imports volume of 2030 taken care through the Oil Palm Mission's expected output, we must continue to look at other possibilities of augmenting our local oil supply from other high oil yielding oilseeds and reduce the imports.

Mustard is one of those which has the potential to grow both from the Demand side as well as on the Supply side. On the demand side, the consumption can increase significantly since it is amongst the top 2 preferred oils in the Upper half of India which caters to more than 50% of our population. Additionally, post covid, the consumer pull for mustard has increased further as it is believed to be one of the healthier oils aiding immunity. Pre Covid-Average mustard consumption was at 2.413m metric tons with the CAGR at 0.4%, while post Covid it has increased to 2.735m metric tons which is 13% higher than pre covid average and well above the CAGR of 0.4%. While there are many other aspects which contributed to this, but still, it makes a strong case of its potential ability to snatch market share from imported oils.

On the supply side, the advantages start with it being a high oil yielding crop, with lesser water requirement as compared to Wheat and its ability to grow in a wide range of soil & weather



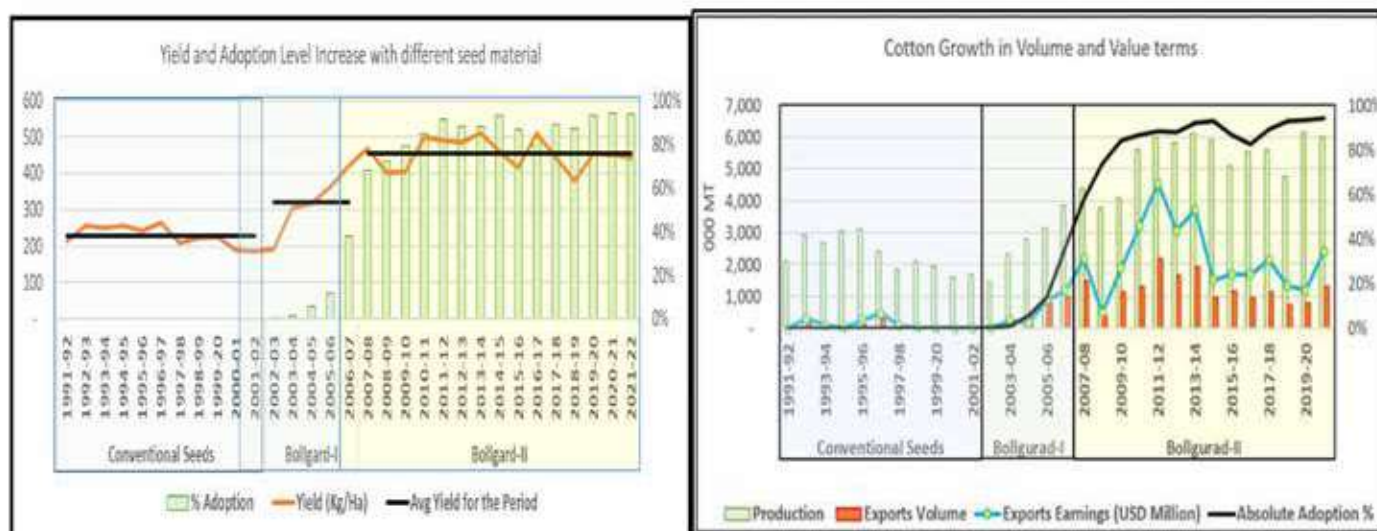
conditions. And in the last two years its margin competitiveness for farmers vis-à-vis wheat has also increased. These are attractive factors for the Farmer but that can happen only if an assured value chain-based procurement and cluster-based processing (through Public or Public Private Partnerships) is provided to the farmers to diversify. They have tasted the gains last year by getting prices much above the MSP and so a momentum is already there. But a consistent import duty regime on the oils which is stable from pre-planting stage to harvest, and which is closely aligned with the intent of the MSP, will give a much-needed forward price visibility and assurance to farmers and for India to achieve the mega shift towards mustard. Another fact is that mustard as of now occupies only about 10% of the rabi crop acreage and as such has enough head room for acreage expansion. But to really accelerate the process, we should not forget to allow the advanced GM Mustard seed planting material locally developed in India by our own Scientists. This coupled with all the other enablers of assured procurement can give an immediate fillip to its adoption and yields improvement, thereby boosting farmers income. That is bound to eventually trigger a much-wanted cycle of increase in acreage and production and reduced dependency on Imports.

### OUTCOMES FROM THE BT COTTON SUCCESS STORY

It has been demonstrated that after the adoption of BT Cotton seed, India managed to double its yields producing enough for the country's rising demand including a surplus for exports. The average yield from conventional seed during 1991-2001 was 229 kg/hectare of lint. Post the introduction of the first BT cotton seed Bollgard I, the average yield moved up to 320 kg/hectare during 2002-2007. After the release of Bollgard II in 2007, the average yield further increased to 455 kg/hectare for the period 2007-2021.

Seed Type	Years	Area (Mn Ha)	Adoption (%)	Yield (Kg/Ha)	Production (Mn Tons)	Consumption (Mn Tons)	Export Volume (Mn Tons)	Export Value \$Mn
Conventional Seed	1991-2001	10.0		229	2.3	2.6	0.08	122
Bollgard-I	2001-2010	8.4	37%	320	2.7	3.4	0.43	512
Bollgard-II	2010-2020	11.7	94%	455	5.3	4.8	1.23	2,223

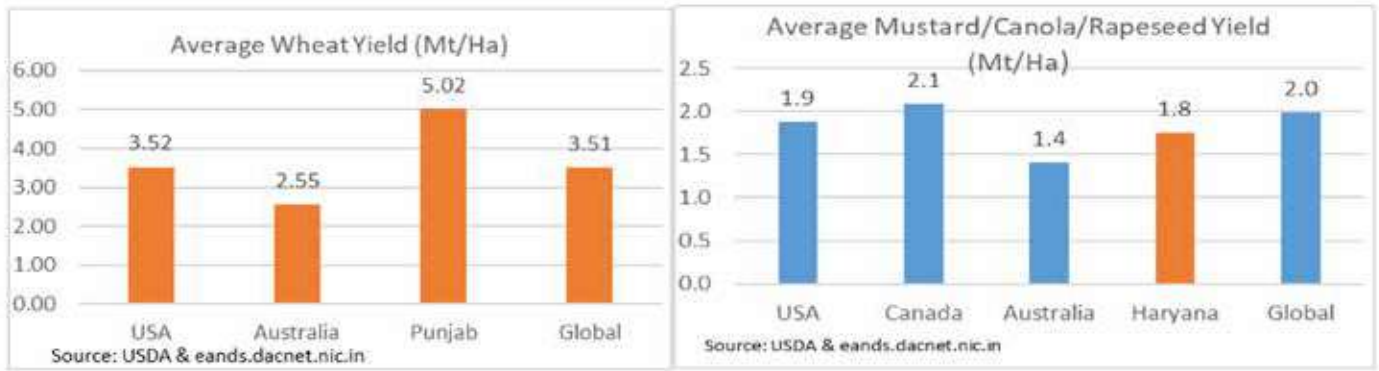
These yields coupled with the acreage expansion and increase in adoption levels after introduction of Bollgard-II led to the output leap frogging from 2.3 m tons to 5.3 M tons in just 2 decades. Simplistically put, every year we now produce more than two times the crop of cotton that we were producing in 2001, with a mere 17% increase in acreages. This phenomenal increase in production has taken care of our rising local demand and helped bring in about \$ 2.2 billion on export earnings. It is basis this success story that we have tried to look at some scenarios of the potential increase in mustard.



## THE UPSIDE POTENTIAL OF MUSTARD & THE PRIZE

It is basis this success story that we have tried to look at the scenario of the potential production that may be possible to achieve if all the above-mentioned enablers including GM Mustard were to be adopted. While model farms show a promise, our estimates indicate that with the conventional mustard seed, in the next 10 years our production can increase to about 16m tons by 2032-33 which would be healthy 33% jump from the current production of 12m tons approximately. But for a more ambitious intent, we need to allow GM Mustard seed. The belief being that farmers will take it up and script a success story akin to cottons. And with Government having permitted imports of GM Soybean Meal from Latin America, it seems there is willingness to address our needs on a more comprehensive basis.

The scenario that we project is based on the assumptions that if all the enablers of value chain and cluster-based assured procurement cum processing are implemented and the GM Mustard seed is allowed, the outcomes will follow a similar trajectory like that of cotton. From the current base of 9.1m hectares the acreage will increase at the CAGR of 3% reaching 12.2m Hectares in 10 years' time. This 3m hectares may seem a high number today but is feasible. As of today, mustard occupies just 10% of the overall Rabi acreage and this 3m additional will take just 3% from the overall Rabi acreage. On the yield side GM Mustard yield can increase at a CAGR of 4.5% to go up to 2.33 Tons/hectare in 10 years at about 89% of adoption levels. While this 2.33 tons/hectare may



seem higher than the yields in the other countries like USA Canada and Australia as well as the global average, but our wheat yields in Irrigated Punjab are also higher than that in USA & Australia and global average.

Moreover, with conventional seed we have seen Haryana achieve 2 tons/hectare for 2 consecutive years from 2018-20. So, with GM Mustard seed we can surely aspire to reach higher yields at National Level. With these two assumptions on acreage and yields we could potentially hit a 28.5m tons of mustard production in 10 years' time. This will imply adding a significant 6.6m tons of incremental oil to our current base of 4.6m tons. Further this will enable reducing our import dependence by another 26% from the 25m volume expected in 2032 and saving approximately \$9.3 billion on the import bill.

This prize of 6m tons more of Oil & a \$9 billion less of Import bill merits a serious evaluation in favor of the introduction of GM Mustard. We should not however, miss out on the other success drivers like Consistency in the Import Duty regime and assured procurement in the wheat focused areas of FCI, to achieve this mega shift for a mega gain.

## BRIEF PROFILE OF AUTHOR

*Simmarpal Singh is a top Executive of a Multinational Company. A Post-Graduate from Institute of Rural Management, Anand (IRMA) he spent his first few years with National Dairy Development Board's Dhara Division and AMUL and then went abroad working for another multinational in Africa and Argentina before relocating back to India in 2013. He can be reached on simmarpal@gmail.com.*

# ‘WORKING TOWARDS NATIONAL MISSION ON OILSEEDS’

**DR P. RETHINAM**  
Plantation Crops Management Specialist, Formerly Executive Director, Asian and Pacific Coconut Community, Jakarta; Chairman Coconut Development Board, GOI and Assistant Director General, ICAR



## 1. Introduction

Edible oils are the dietary source for energy, growth and healthy functioning of human life. In addition, they put high emphasis on tasty food, improve texture of food items, increase palatability and flavour of food. Thus, edible oils constitute a major component of food expenditure in households.

Oilseeds occupy an important position in the agricultural economy of India. The country is the largest producer of oilseeds in the world and contributes 7 % of the global vegetable oils production with 14% share in the area, 12% of global consumption and 21% of globally traded volumes. However, India, at present, is not self sufficient in edible oil production, and hence, the domestic requirement is met through imports.

The diverse agro-ecological conditions in the country are favourable for growing different annual oilseed crops, which include seven edible oilseeds (groundnut, rapeseed & mustard, soybean, sunflower, sesame, safflower and niger) and two non-edible oilseeds (castor and linseed). Cultivation of oilseeds is undertaken across the country in about 27 million ha (M ha) mainly on marginal lands, of which 72% is confined to rainfed farming.

In spite of the fact that oilseed crops are the second most important determinant of agricultural economy, next only to cereals within the segment of field crops, the self-sufficiency in oilseeds attained through ‘Yellow Revolution’ during early 1990’s, could not be sustained beyond a short period unlike ‘White’ and ‘Green Revolutions’ which were successful. Though the subsequent ‘Technology Mission on Oil seeds including Coconut and Oil palm’ formulated during 1986 and implemented later on made some impact in increasing the production and reducing the import for a short period, it could not be sustained due to higher demand.

The production could not match with the demand due to increase in population and purchasing power. The quantum of import was going up to meet the ever-increasing demand for edible oils which necessitated enhancing the production and productivity of vegetable oils in India. Though many attempts were made over a period of time to increase the vegetable oil production through nine annual oilseed crops and non-traditional and oil-bearing tree crops in the country, the demand could not be met with domestic production and the import was going up, of which palm oil was the largest imported oil.

At this stage, the Hon’ble Prime Minister of India came up with a new Mission under ATMANIRBAR programme ‘National Mission on Edible Oils-Oil Palm (NMEO-OP)’ to make our country self-

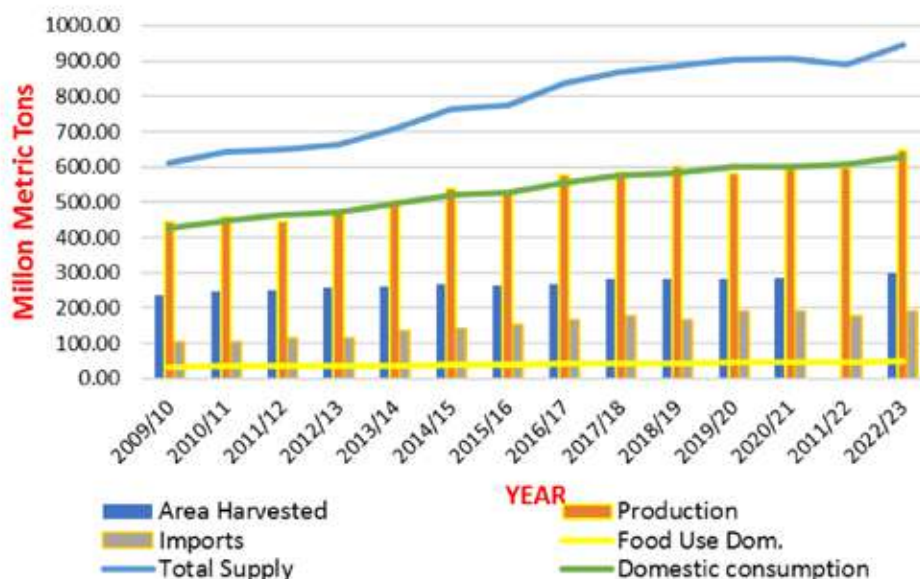
sufficient in edible oils. The programme is an excellent one and the success is assured, if proper planning, implementation, effective and efficient monitoring, appropriate and timely mid-term analysis and correction wherever needed, openness in approach as well as having a competent and field experienced practical 'Advisory Service' to guide the Mission to achieve the set goals.

## 2. Global Movements towards oil seeds and product supply and Distribution

Oilseed crops are rich sources of oils, proteins, minerals, vitamins, dietary fibers, and high-value agricultural commodity for use in refined edible oil products and provide raw material for production of biodiesel. As the world population increases, demand for high-quality seed oils will continue to grow. The presence of polyunsaturated fatty acids in sesame oil makes sesame (*Sesamum indicum*) an important oilseed crop due to its excellent health effects.

The global area under cultivation of oilseeds had increased over a period of time from 235.80 during 2009-10 to 299.21 Ma during 2022.

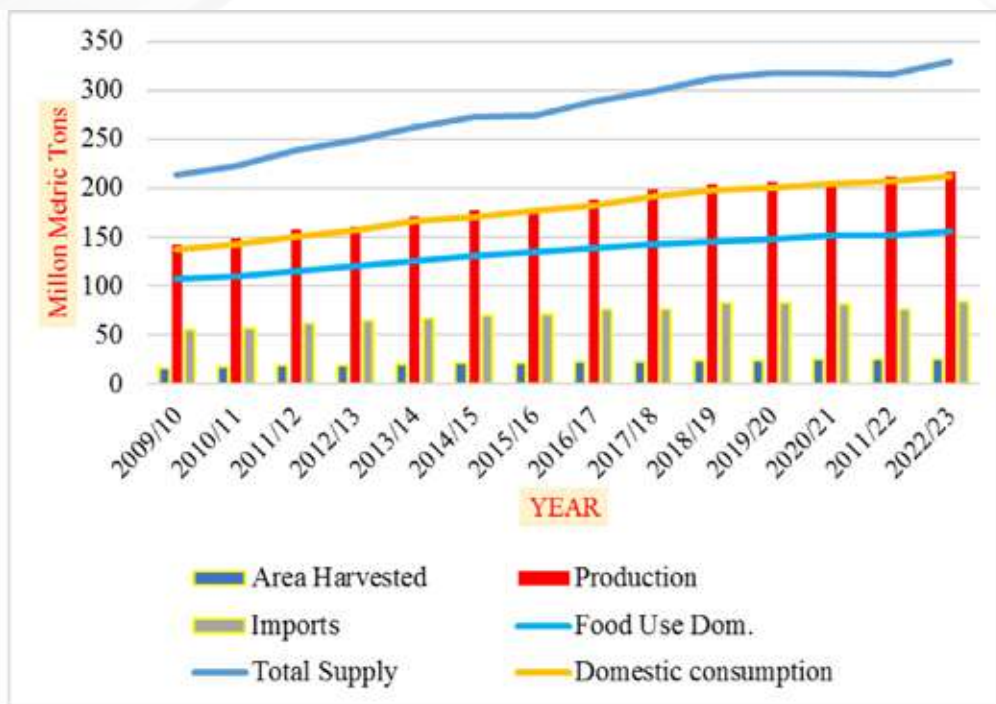
The harvested area, production, total supply, imports, domestic consumption of oilseeds during the above period is depicted in Fig.1



**Fig. 1. World oilseeds and Products Supply and Distribution (Data from Foreign Agricultural Services, Global Market Analysis, June 2022)**

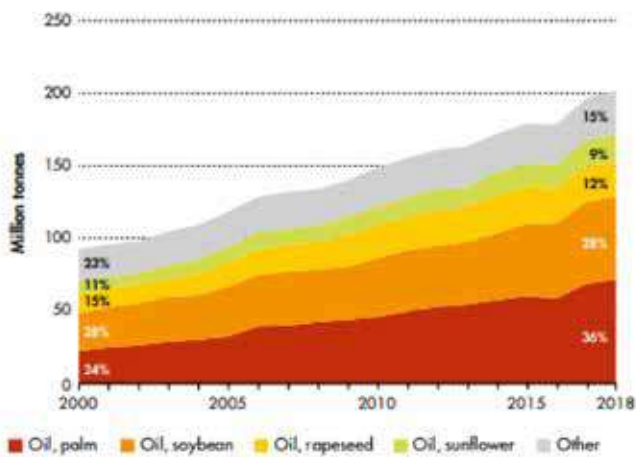
The global area under oil seeds has increased by 26.89 %, production by 44.60 %, import by 87.12 % and domestic consumption by 47.41 %.

The details of world major vegetable oils, production, import, supply and distribution are given in Fig.2.

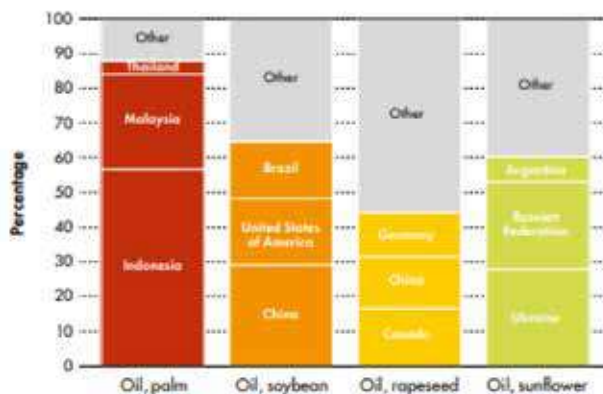


**Fig.2. World vegetable oils-production, supply and consumption (Foreign Agricultural Services, Global Market Analysis, June 2022)**

The world production of vegetable oils by main commodities are given in Fig. 3.A & B.



Source: FAOSTAT  
 Note: Percentages on the figure indicate the shares in the total; they may not tally due to rounding.  
<https://doi.org/10.4060/cb4477en-fig23>



Source: FAOSTAT  
<https://doi.org/10.4060/cb4477en-fig24>

**Fig. 3A. World production of Vegetable oils Main commodities**

**Fig.3B World production of main vegetable oils by main producers (2018)**

Of the main vegetable oil commodities, palm oil is the largest produced one, followed by oils of soya bean, rape seed and sunflower, respectively.

The global vegetable oil situation given in Table 1 clearly indicates the dominance of production



of palm oil over the other oils. In the same way, of the total consumption of vegetable oils, palm oil plays a vital role as could be seen in the figures and Table 1.

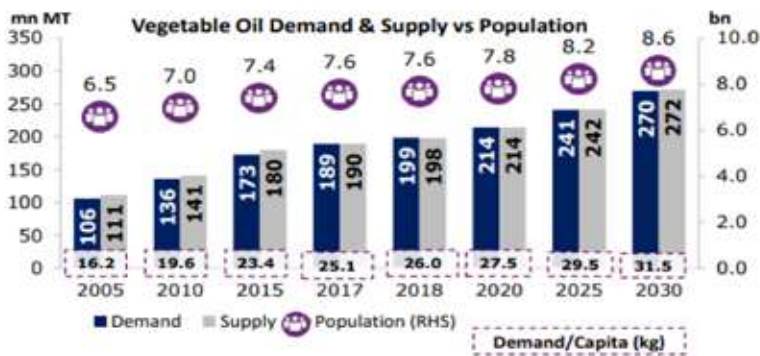
**Table 1. Global Vegetable Oil Situation till 2025**

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 785 per tons means about Rs. 53 per kg

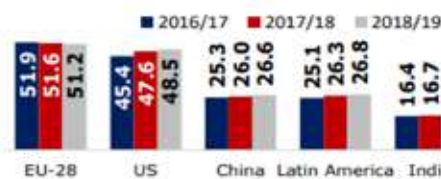
The per capita demand of vegetable oil of different countries shows that EU and US are having high demand followed China and Latin American countries and the least in African countries. However, the per capita demand for palm oil is more in EU, followed by India and Africa. The population growth is a key driver for global vegetable oil demand and supply ( Fig .4).

**Population Growth is a Key Driver**

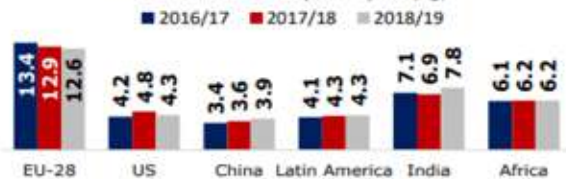


- Key Highlights**
- The global palm oil supply is expected to reach more than 77 mil MT by 2020 from the 70 mil MT in 2019, driven by robust long term fundamentals.
  - Malaysia and Indonesia are anticipated to remain as major suppliers, with production expected to reach more than 66 mil MT by 2020.
  - Population growth remains key in driving palm oil demand in the long run, especially in Africa and the Asia Pacific

**Vegetable Oil Demand per Capita (kg)**

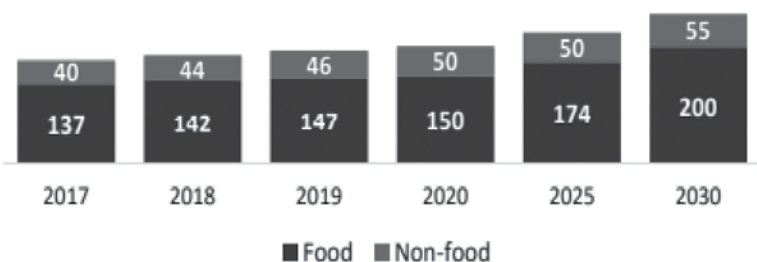


**Palm Oil Demand per Capita (kg)**



Source: LMC Oilseeds & Oils Report, United Nations, USDA

**Global Vegetable Oil Consumption (Food & Non-Food), mil MT  
2017-2030**



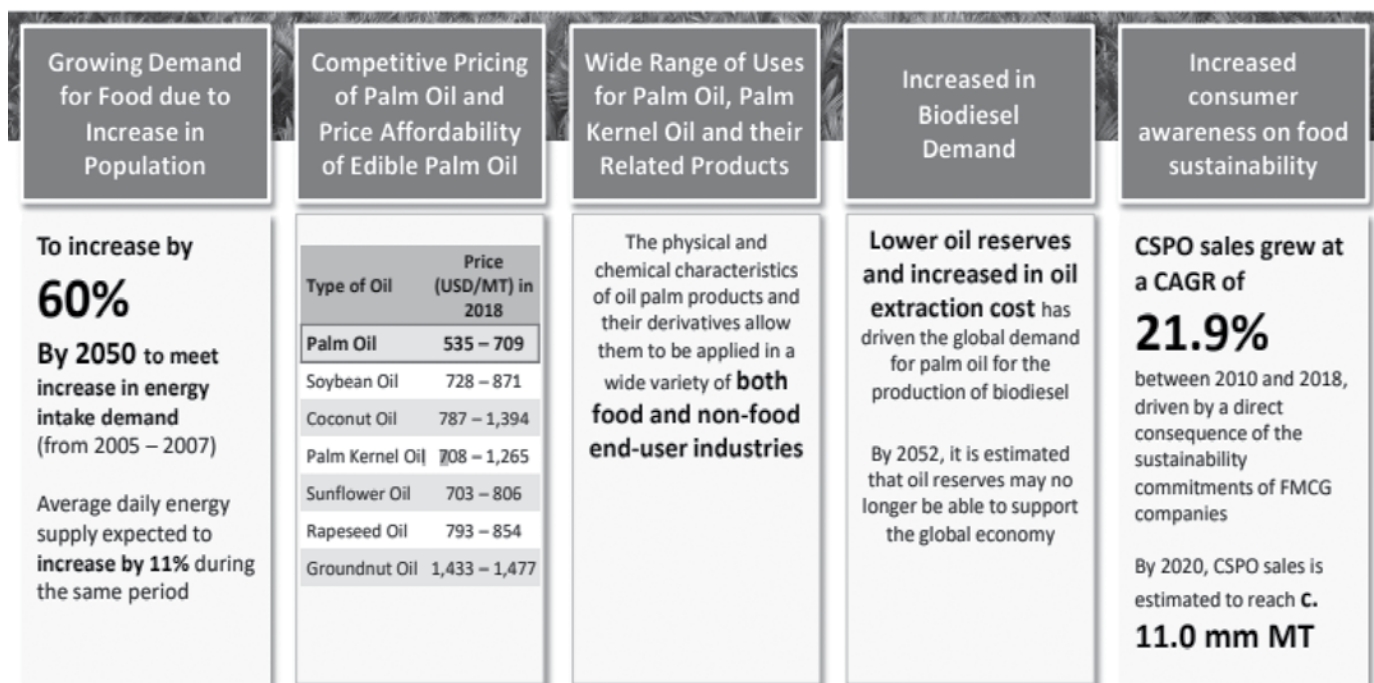
**Key Highlights**

- Global Vegetable Oil Consumption is expected to grow at CAGR 2.9% from 2017 to 2030, with overall demand increasing

**Fig. 4. Global Vegetable Oil Demand & Supply**

The global demand for vegetable oil is mainly driven by food. The demand for biofuel is expected to slow down as food-based feedstock becoming politically unpopular.

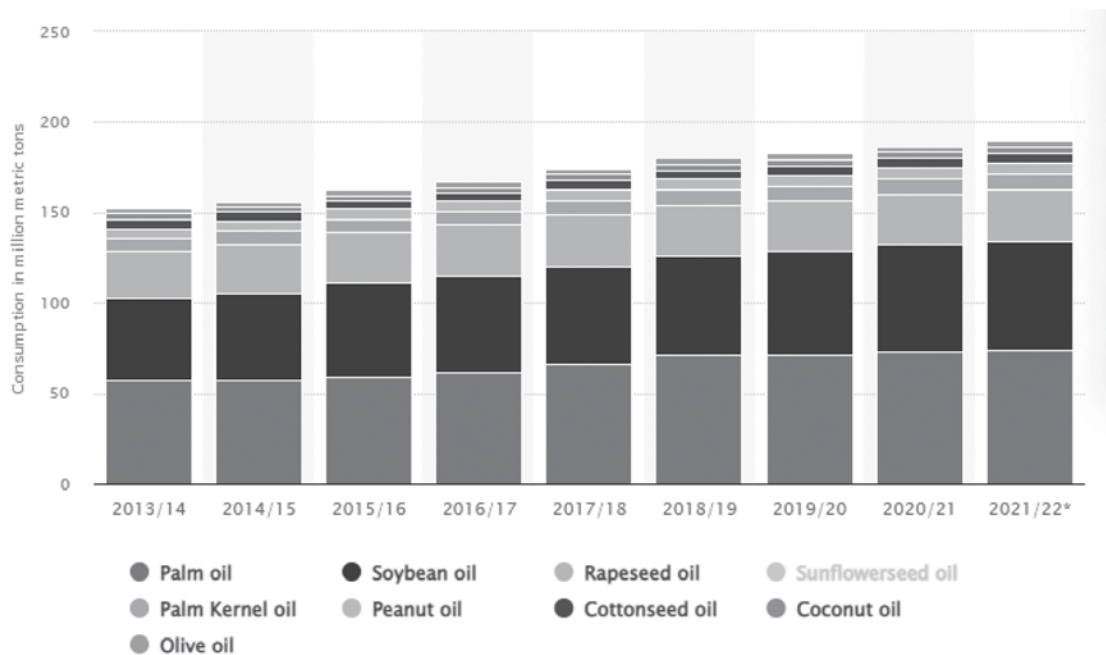
The demand drivers of global palm oil plantation and edible oil industry are clearly identified and presented in Fig. 5.



Source: World Bank, RSPO

**Fig.5. Demand Drivers of the Global Oil Palm Plantation and Edible Oils Industry**

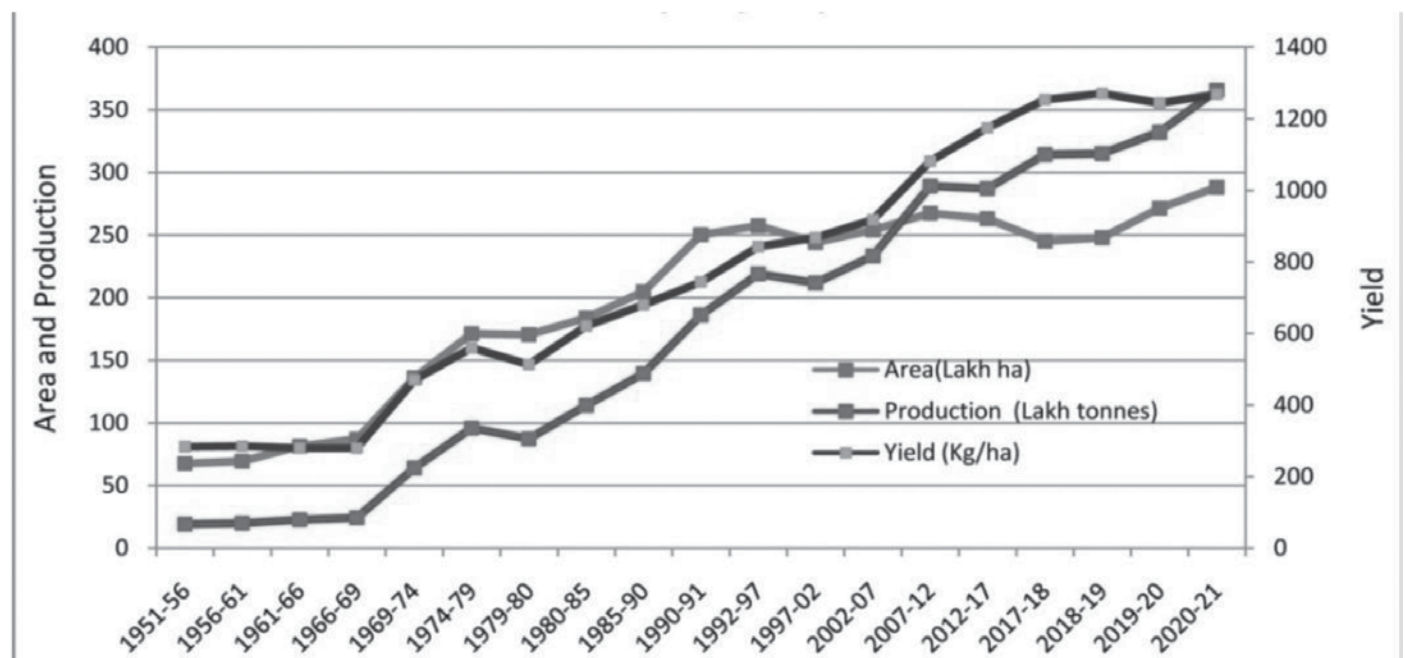
The global vegetable oil production was amounted to around 209.14 million metric t in 2020/21. (Statista M. Shahbandeh2022). The consumption of different vegetable oils given Fig.6 shows that during 2020-21, consumption of palm oil was the highest at 73.87 million t, followed by soyabean at 60.25 million t, rape seed at 28.85 million t, sun flower at 20.43 million t and followed by others.



**Fig.6. World-wide consumption of different types of vegetable oils (million metric tons)**

### 3. Trends in area, production and productivity of oilseeds in India

The details of area, production and productivity of oilseeds in India are depicted in the Fig. 7.



**Fig.7. Area, production and productivity of oilseeds in India**

The area, production and productivity had considerably increased over years. However, the productivity increase is not comparable with that of other countries for almost all crops except castor as could be seen from Table 2.

**Table 2. Comparative Productivity Status of Oilseeds-India, World and country with Highest Productivity**

Crop	Average productivity in India (kg/ha)	Average productivity in world (kg/ha)	Country with highest global productivity (kg/ha)
Groundnut	1,687	1,777	4,496 (USA)
Rapeseed -Mustard	1,491	1,994	3,497 (Germany)
Soya bean	1,047	2,484	2,932 (Brazil)
Sunflower	1,043	1,749	2,559 (China)
Sesame	467	506	1,313 (China)
Safflower	637	827	1,536 (Turkey)
Castor	2,039	1,235	2,039 (India)
Linseed	605	986	1,728 (Canada)

The average per hectare yield of major oilseeds in India is over 50% lower than average world yields in several crops as could be seen from Table 2, the only exception being castor, where the per ha yield is higher.

The yield gap studies conducted in various Front Line Demonstrations (FLD) under NMOOP had clearly brought out the yield gap in different oilseeds crops (Table 3).

**Table 3. Yield Gap identified in various oilseed crops in India**

Crop	Yield gap (%)
Groundnut	36.4
Soya bean	26.3
Mustard	30.2
Sunflower	59.8
Sesame	17.7
Safflower	46.6
Niger	22.9
Castor	18.9

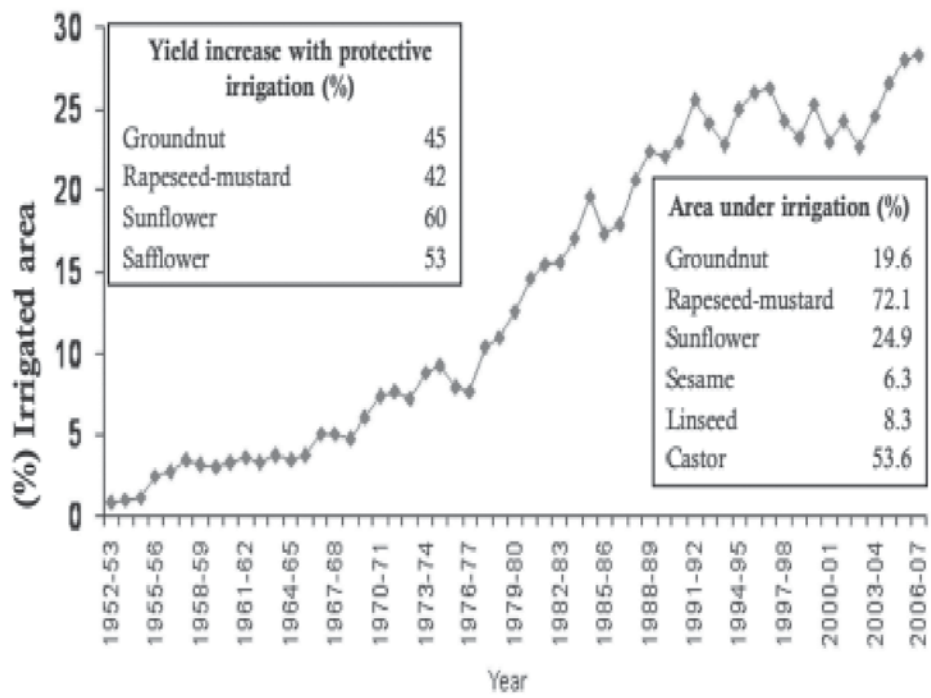
Source: FLD conducted by National Mission on Oilseeds and Oil Palm

(NMOOP), <http://nmoop.in>

The data presented above shows that the yield gap is very wide with the available varieties grown in the country due to various reasons. We have to go a long way to bridge these gaps in every crop.

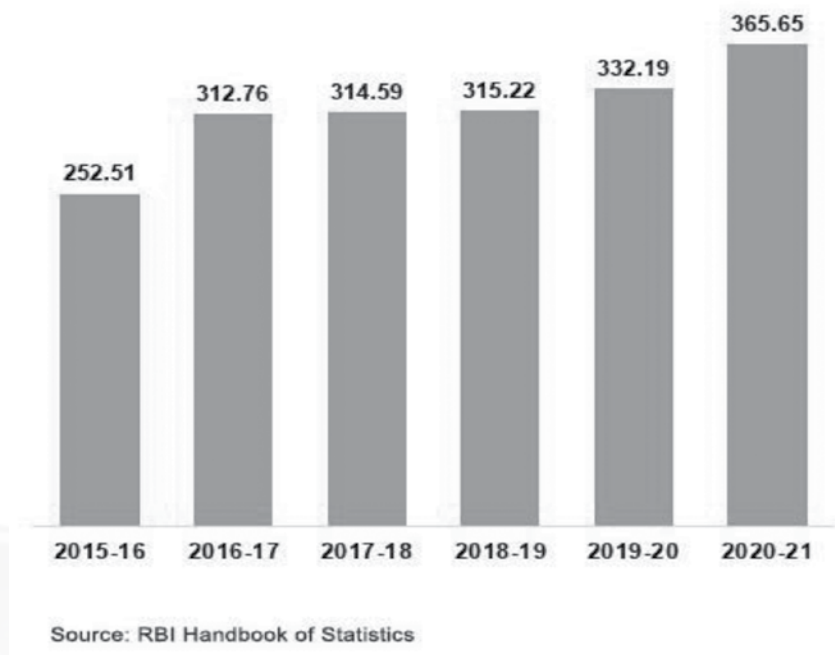
Only about 27.8 % of oil seeds crops could be brought under irrigation over a period of years from

1952-53 to 2007-08. Spectacular increase in yield to the extent of 42 to 60 % in different crops (Fig. 8) could be achieved, if irrigated area could be increased.



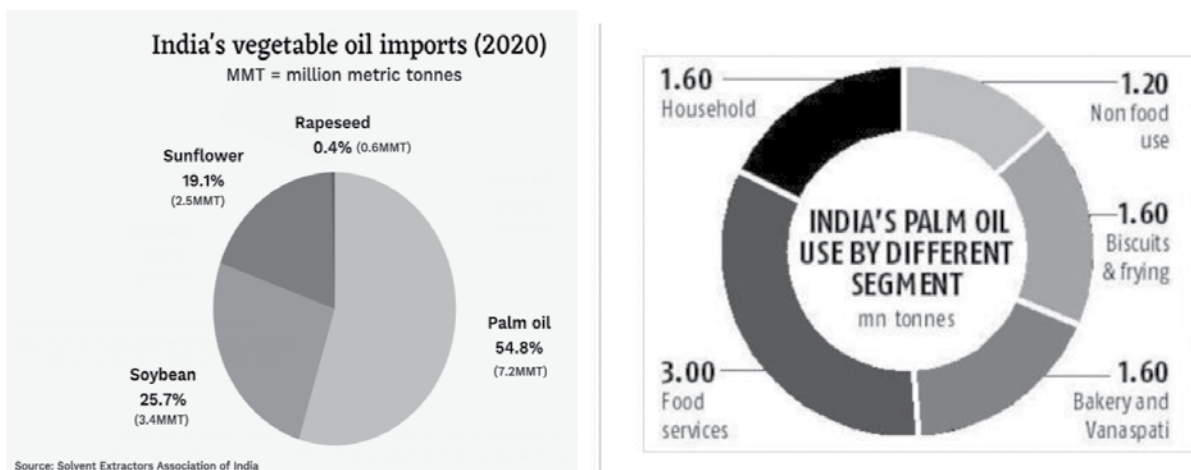
**Fig. 8. Percentage area under irrigation for all annual oilseed crops (1952-53 to 2007-08)**

Recently, there is encouraging and increasing trend in production of oilseed during last 6 years as shown in Fig 9.



**Fig. 9. India's Oilseed Production (Lakh tons)**

India's vegetable oil import (2020) and India's palm oil use by different segments given in Fig.10 showed that palm oil import is the highest (54.8%) followed by soyabean (25.7%), sunflower (19.1%) and Rape seed (0.4%). Indian palm oil use is more for food services (3.0 million t), whereas, non-food use is only 1.2 million t.

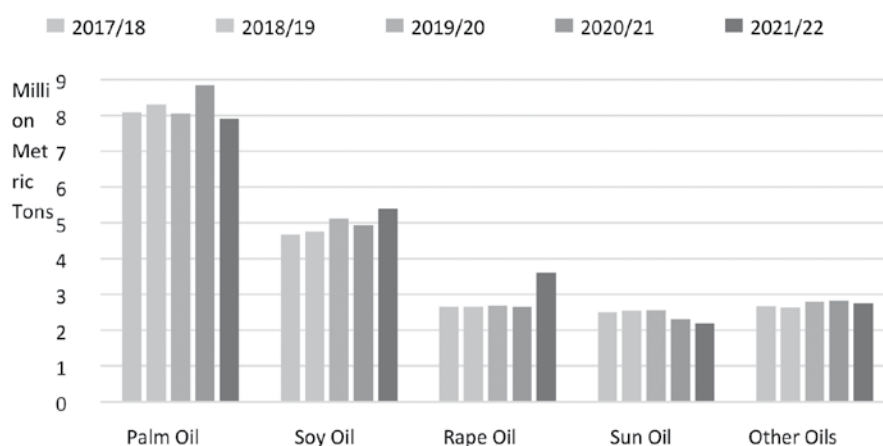


**Fig. 10. India's vegetable oil import (2020) and India's palm oil use by different segments**

Higher economic growth and concomitant rise in incomes, coupled with change in tastes and preferences in both urban and rural areas are expected to increase the demand for high-value commodities, especially the edible oils.

#### Indian vegetable oil food use consumption

Indian vegetable oil food use, consumption for 2017-18 to 2021-22 is given in Fig.11.



**Fig. 11. India Vegetable Oil Food Use Consumption**

The above figure clearly shows that palm oil plays a vital role in food use consumption in the country during all five years.

## Indian vegetable oils import

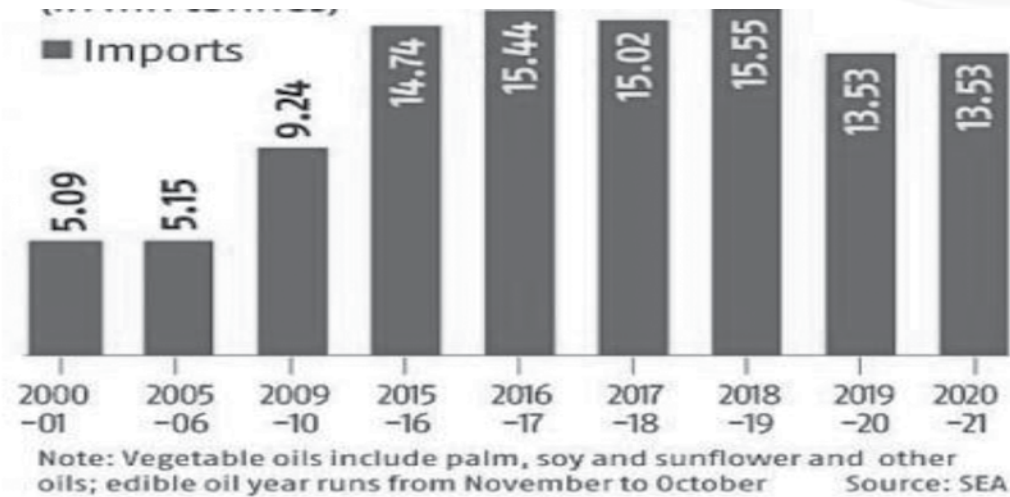


Fig12. Indian Vegetable oils Import from 2000-01 to 2020-21 (million tons)

Indian vegetable import from 2000-01 to 2020-21( Fig.12) had increased from 5.09 million t to 15.55 million t during 2018-19, which reduced to 13.53 million t in the subsequent years. Palm oil import increased from 1994 onwards and sharply from 2005 onwards and experienced a slight drop during the last two years (Fig.13).

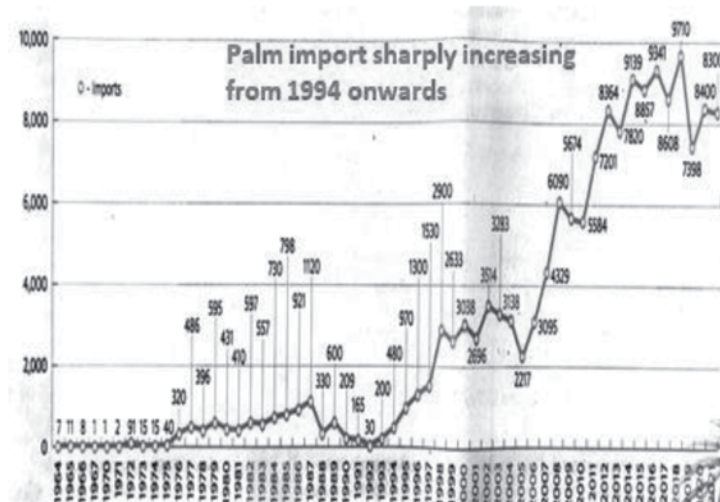


Fig.13. Indian Palm Oil Import over the years

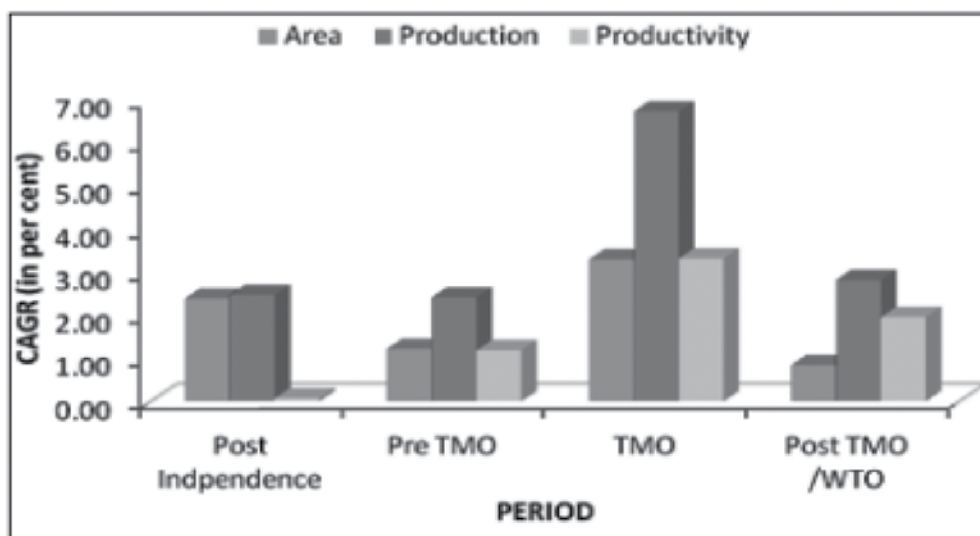
## 4. Oilseed economy of India

### Concerns and issues

Indian vegetable oil economy is the world's fourth largest after USA, China and Brazil. The oilseed economy of the country faces a host of challenges on technological, institutional and policy fronts. Oilseed cultivation in India is predominantly dependent on rainfall and this leads to a higher magnitude of instability in its production. Often, the marginal lands are earmarked for cultivation of oilseed crops. Such inherent disadvantages ensure that a level playing field is not provided to the oilseed crops even when they are being compared increasingly with their competing crops in terms

of production, productivity and profitability. When it comes to crop-wise coverage of irrigated area (2016-17), almost 70 % of cereals and 52 % of food grains are covered under irrigation. But when in the case of oilseeds, the coverage of the irrigated area is only 27.8%. From 5.16 mt during 1950-51 to 365.65 mt during 2020-21, oil seed production in India has witnessed growth at a slow pace. The average yield increase was 284 to 1,269 kg/ ha for the above period which is almost 50 % lower than the global average.

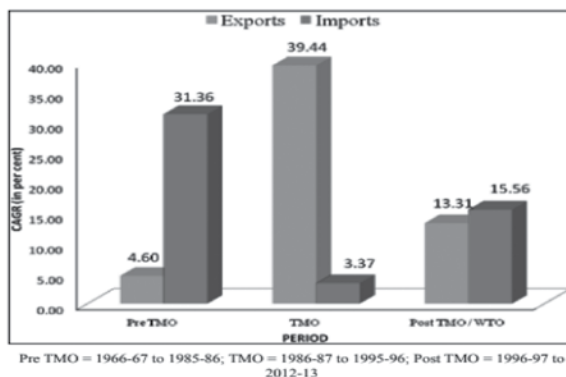
The Compound Growth Rate (CGR) for the period from 1950-51 to 1965-66 indicated that area increased by 2.38 %, whereas the production increased by 2.46%. The growth rate of productivity was a meagre 0.07% (Fig. 14).



Post independence = 1950-51 to 1965-66; Pre TMO = 1966-67 to 1985-86; TMO = 1986-87 to 1995-96; Post TMO = 1996-97 to 2012-13

**Fig. 14. Compound growth rates of annual Oilseeds in India ( Paroda 2013)**

The compound annual growth rate of exports and imports oilseeds / oilseed products during pre TMO, TMO Period and Post TMO /WTO periods indicate that imports were reduced but export had increased. But during Post TMO/WTO period, export reduced and import started moving upwards (Fig.15).



**Fig. 15. Compound annual growth rates of exports and imports of oil seed /oil seed products (%) (Paroda 2013)**



The country's population is accustomed to cheap vegetable oils due to the invisible and visible subsidies in the supply side which have been in existence for quite a long time. The unviable nature of some of these subsidies means that they will have to be withdrawn, at least partially in the near future. This will translate into higher retail prices of edible oils at the consumer end of the edible oil value chain, unless and until the supply-side constraints are addressed in a focused manner.

Another concern for oilseed cultivators in particular is the lack of availability of quality seed material of improved cultivars. Though the National Agricultural Research System (NARS) has developed several varieties with high yield potential and varieties suited for specific farming situations, quality seeds of these varieties are in short supply. The timeliness in making available quality seeds is also of critical importance as the window for sowing the crops tend to be of short duration.

A major concern for the policy planners involved in ensuring the domestic availability of edible oils is the fact that domestic prices of oilseeds and vegetable oils is too un-remunerative to enthruse farmers for intensive oilseeds cultivation. The income terms of trade for the oilseed cultivators vis-a-vis farmers cultivating other crops need to be balanced. This is a long felt need of the farmers. This has been brought out many times but still need to be addressed. When we are aiming for doubling the farmers income, oil seed farmers are still distress.

Inadequate and imbalanced crop nutrition, the slow pace in bridging the yield gap and lack of adoption of the appropriate agronomic practices and available technologies are some of the key issues related to the production of oilseed crops. It is unfortunate that the level of production that is achievable with the available technology is not being realized due to lack of adoption of technologies by the oilseed cultivators.

The processing sector is integral to the oilseed sector. A vibrant and efficient processing sector is a pre-requisite for the optimum growth and development of oilseed economy. India's oilseed processing sector has been plagued by a slew of technological and policy issues culminating in the existence of a processing sector low in efficiency and capacity utilization. If the oilseed cultivators have to be linked in an economically viable and sustainable manner to the oilseed value chain, the role of oilseed processing units cannot be underestimated. The market intervention policies of the past have not only failed to produce the desired results and effects, but have also created an atmosphere of uncertainty.

The fluctuating and counter directional policies with respect to imports and exports have left the stakeholders unsure of the long-term strategies they should opt and this ultimately hurts the interest of the nation. The outcome of such market interventions and trade policies was distortion and introduction of inefficiencies in the price discovery process and ultimately affecting the relative price structure of oilseeds and their derivatives with respect to their competing crops and production. There are two major policy initiatives, which have significantly impacted the development of Indian oilseeds sector. One was the setting up of the 'Technology Mission on Oilseeds' in 1986, which gave a thrust to Government efforts in augmenting production of oilseeds. This is evident by an impressive increase in the production of oilseeds from about 11 million t in mid-1980s to 21.5 million t in 1993-94.

There was complete reversal in the dependency on imports and the country was close to reaching self-sufficiency in oilseeds. The globalization/WTO era failed to consolidate the gains achieved

during the TMO period due to operationalization of market/non-market forces in addition to biotic/abiotic problems

Higher economic growth and concomitant rise in incomes, coupled with change in tastes and preferences in both urban and rural areas are expected to increase the demand for high-value commodities, especially the edible oils.

The other important feature which had a significant impact on edible oilseeds/oil industry has been the policy of liberalization and globalization in the early-1990s allowing free import of edible vegetable oils and reduction in import tariffs. This policy led to a significant increase in imports of edible oils and had some adverse impact on domestic production and remained stagnant at about 21-22 million t. However, oilseeds production witnessed an increasing trend during the last decade and production went up from about 25 million t in early-2000s to about 32.5 million t in 2010-11, a record production. As per the 3rd advance estimates by Ministry of Agriculture dated May 15, 2014, the production of nine major oilseeds was about 32.4 million t during 2013-14. Although, production of edible oilseeds has increased during the last decade, but share of imports in total consumption, there is reduction.

## **5. Study on Edible Oilseeds Supply and Demand Scenario in India: Implications for Policy by Division of Agricultural Economic division of IARI, New Delhi**

Special emphasis may be given to the following:

- Increase public research spending in oilseed crops for development of biotic and abiotic stress tolerant varieties and other potential areas for yield breakthrough.
- Strengthen the oilseed crop seed chain, particularly in groundnut to match the variety specific demand for higher yield.
- Provide incentives to private sector participation in processing and value addition in oilseed crops. Also, constraints for low capacity utilization should be addressed.
- Ensure availability of key physical (fertilizers, pesticides), financial (credit facilities, crop insurance) and technical inputs (extension services) in major crop ecological zones for oilseed crops.
- Implement market reforms and policies, such as contract farming and public private partnership in production and processing, to ensure a competitive market for oilseeds and edible oil along with adequate protective measures to avoid unfair competition from the international markets. Improving local capacities and the social, economic and environmental sustainability of agriculture through delivery of technology and services and strengthening of institutions shall bring in the desired growth in the oilseed crop economy. This growth will be of immense benefit to the country as oilseeds are grown mainly in the disadvantaged regions.

The demand projections of vegetable oils for India are presented in Table 4.

**Table 4. 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

Elco Vijay Sarthana Online

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## 6. Various attempts made in India to increase vegetable oil production over a period of time

1. Sixth Plan period: National Oilseeds Development Project (NODP) and continued during Seventh Plan period.
2. 1986: Technology Mission on Oilseeds (TMO) was launched and continued under the Technology Mission on Oilseeds and Pulses (TMOP) up to 2003-04.
3. Integrated scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM) from 2004-05 to 2013-14.
4. National Mission on Oilseeds and Oil Palm (NMOOP) including Tree borne Oil seeds (TPO s) was launched during 2014-15. With three Micro Missions:

Under the MM-I, the mission aims to increase the production of oilseeds to 35.51 million t from the current average production of 28.93 million t of oilseeds.

Under the MM-II, the mission's target is to broaden the area for oil palm cultivation and boost the production of Fresh Fruit Bunches (FFBs) from 4,927 kg/ha to 15,000 kg/ha.

MM-III envisages to strengthen the seed collection of Tree Borne Oilseeds (TBOs) such as olive, sal, mahua, kokum, wild apricot, Tung, etc., from 9 lakh t to 14 lakh t and provide best planting materials for the expanded areas.

5. NFSM-Oil Palm: The NMOOP was subsumed under National Food Security Mission during 2018-19. The scheme is being implemented in 12 states (namely, Andhra Pradesh, Assam, Arunachal Pradesh, Chhattisgarh, Gujarat, Karnataka, Manipur, Mizoram, Nagaland, Odisha, Tamil Nadu and Telangana) in India. In order to promote oil palm cultivation, assistance is

provided for planting material, maintenance and intercropping costs for 4 years, micro irrigation, bore well, pump set, farm pond, establishment of seed garden, support to oil palm processing unit in North East/Hilly states and Training of farmers & extension workers, demonstrations and distribution etc. In all the 12 states, the farmers are getting benefits of NFSM-Oil Palm.

The year-wise area expansion achievement and production of oilseeds made under NFSM-Oil Palm during 2018-19 to 2020-21 is given in Table 5 below.

**Table 5. Year-wise area expansion and production of oilseeds made under NFSM-Oil Palm**

Period	Area expansion (ha)	Production (lakh t)
2018-19	14,447	322.57
2019-20	13,496	334.23
2020-21	14,760	365.65 (3rd advance estimated)

## Yellow Revolution in India

This revolution was launched in the year 1986, and kept going on till 1987 for the production of edible oils. Mustards, sesame seeds etc. were produced to achieve self-reliance, and this came to be known as the 'Yellow Revolution'. The father of the yellow revolution was Mr. Sam Pitroda. The oilseeds which come under this revolution include groundnut, mustard, soybean, safflower, sesame, sunflower, niger, linseed, and castor.

India came up with the 'Oil Technological Mission' during 1986 to ensure that there is success for this particular movement. The Yellow revolution implanted the hybrid mustard and sesame seeds which increased the production of edible oil significantly.

- It was also because of the use of improved technology for oil production in the country.
- The revolution gave rise to a new era with blooming sunflowers in the state of Punjab.
- The country was brimming with opportunities. Not just that, it also helped in controlling the socio-economic differences in India.
- There was a significant change as the oil production was merely 12 million t when the revolution started, which turned to 24 million t 10 years.
- With the use of the hybrid seed, there were many other measures taken to improve production.

There was an increase in agricultural land usage to about 26 million ha. Along with that, there was extensive use of modern technological inputs.

## Features of the Yellow Revolution

The Yellow Revolution came up with many benefits for the farmers. They were given facilities like fertilizers and pesticides for the crops, as well as irrigation etc. Other facilities included the transportation and storage of the produce. This was required to make the revolution successful.

- Boards such as the National Dairy Board (NDB) were given many important responsibilities to enhance the production of oilseeds.

- The NDB took the responsibility to increase the production of groundnut oil in Gujarat.
- Just like that, another board was the National Oilseeds and Vegetable Oils Development Board. They had the power to enhance the production of oilseeds in other areas as well.
- Oilseeds Production Thrust came in India to boost the production of the four oilseeds, mainly, mustard, groundnut, soybean, and sunflower.
- The country had potential and many new areas for development for the farmers. There were about 3,000 oilseed societies being put up with the hard work of 13 lakh farmers and 25 ha of land that was used in India.
- In the last ten years, India might have achieved self-sufficiency in oil production, but the output of India has been way less than what the citizens are consuming.
- India has started to import oilseeds from Malaysia, Argentina, Brazil, etc. to make sure that everyone meets their demand.

### **Yellow Revolution at Present**

At this time, the cultivable area cannot be expanded more. There is a continuous shortage of edible oils that would suggest that the Oilseeds Technology Mission and growing oil palms have had a little impact.

- It is very difficult to increase production because there are several constraints with these crops. They are much more prone to pests and diseases.
- The area has poor environments which lead to unhealthy crops.
- To boost the output, there have been many tactics used by the farmers, like to grow high-yielding cereals to earn higher profits and use improved technology.

When Green Revolution and White Revolution made tremendous success, Yellow Revolution could not make much impact. This needs to be critically analysed.

Dr. R.S. Paroda, Former Director General, Indian Council of Agricultural Research (ICAR); Secretary, Department of Agricultural Research Education (DARE); and Chairman, Trust for Advancement of Agricultural Sciences (TAAS) and Haryana Farmers' Commission while delivering the first Dr. M.V. Rao Lecture organized by the Indian Society of Oilseeds Research on 24th August, 2013 at DOR, Hyderabad on 'The Indian Oilseed Scenario: Challenges And Opportunities' had made many valuable suggestions and concluded as follows:

"Significant innovations in frontier science and technologies such as nanotechnology, genetic engineering and biotechnology, synthetic lipid science and technology, information science and modelling, simulation and forecasting and the recent developments in related sciences such as hydroponics, vertical farming and protected agriculture; precision agriculture systems; biosecurity and biodiversity management provide unlimited opportunities for supporting higher production and product development to meet the changing requirements through precision farming and protection/conservation practices. Post-production, developments in dynamic integration of

production, processing, quality with global trade would make production of vegetable oils profitable and competitive”.

## **7. Overall Impact of Oil Palm Development Project (OPDP) under Technology Mission on Oil seeds 1990-2018.**

Highlights of overall progress of irrigated small holders’ crop of oil palm in the country over three decades.

Irrigated oil palm cultivation as a small holders’ crop was started in the West Godavari District of Andhra Pradesh during 1987-88 and the Oil Palm Development Programme (OPDP) was implemented from 1990-91 during the Eighth Five Year Plan and now one cycle of thirty years is over. Starting with six states, extended to nine and later to 12 and now in 16 states are covering an area of 3.31 lakh ha with a production of 16.25 lakh t of FFB which could contribute to 2.70 lakh t of Crude Palm Oil during the year (2017-18).

Though the achievement of area expansion is not matching with the target fixed by TMOP/ ISOPAM /NMOOP/NFSM – Micro Mission II Oil Palm, many positive benefits have been achieved which had laid a strong foundation and encouragement which will pave way for smart oil palm development in future rectifying the short falls, to increase the vegetable oil pool of the country though palm oil production.

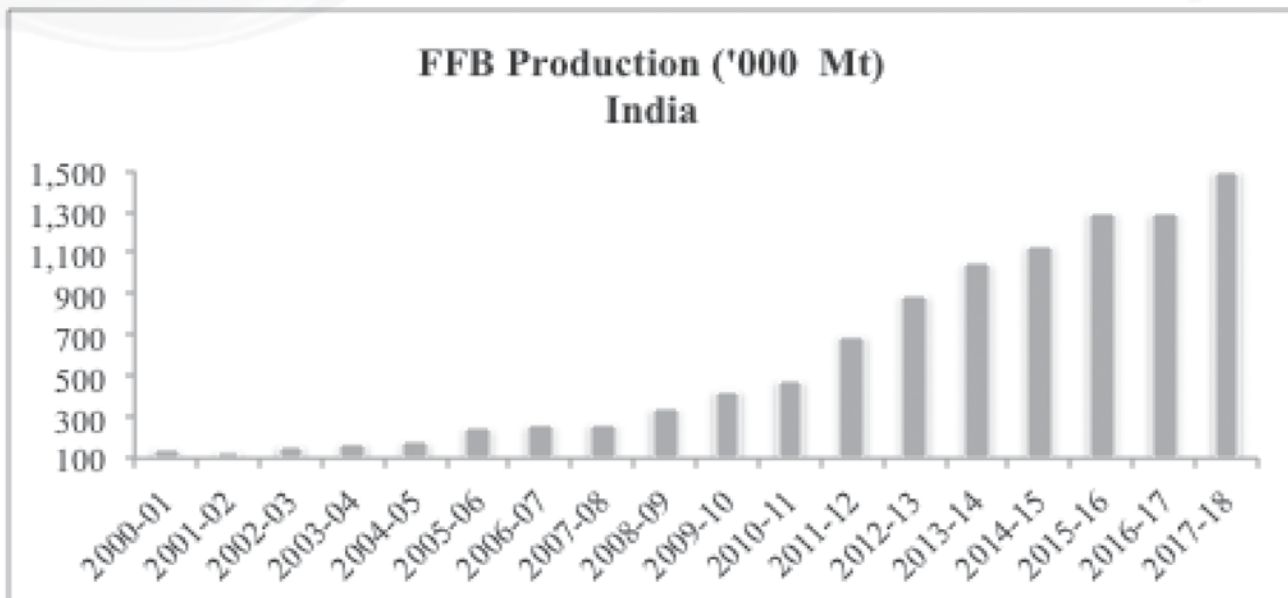
1. When every expert within country and abroad including FAO Expert on Tree Crops had raised doubt about the successful performance of oil palm in India because of low rainfall and high summer temperature in the East Coast and low minimum temperatures in some regions including NEH Region, we have proved that irrigated oil palm as small holders’ crop in the identified 18 potential states by Chadha and Rethinam Committees of GOI during 1988, 2006 & 2012, which represent varied agro-climatic zones with pH ranging from 6.0 to 8.5; maximum temperature up to 45oC and above for some days during summer; minimum temperature going below 10oC in East and North East Hill Regions. India may be the first country to cultivate large scale irrigated oil palm under such varied agro climatic and environmental conditions.
2. In matured plantations, yield level of 20 to 25 t FFB/ha/year was obtained by many farmers and maximum yield of 50 t FFB /ha/year by some farmers gave the confidence that we can successfully cultivate oil palm in our country. Maximum calculated yield potential of 12 t CPO /ha/year was also obtained in the plantations near Jangareddygudem, Andhra Pradesh as against 18 t CPO/ha /year as maximum potential yield of oil palm reported by Malaysia.
3. The poor performance in many states made us to examine the on ground realities which were discussed in SOPOPRAD Whats App group participated by farmers, processors, Development Department Officers and Scientists and an elaborate Status Report on Oil Palm was prepared by Dr. V.M.Reddy and Mr.Uadaykumar. A brief summary of the report is presented in the Newsletter and the main report was put in SOPOPRAD Whats App group by the authors.
4. In the process of cultivation of oil palm crop we have developed many production technologies including raising suitable inter/ mixed/ multi-storied cropping /farming systems to get a sustainable income by the farmers.

5. Starting from Zero, we have developed 26 processing units in the country which has the processing capacity of 584.3 t /h. Andhra Pradesh alone has 13 units with processing capacity of 454 t/h and occupy the top rank in the country both in area and production. Most of the machineries for the processing units are manufactured locally except a few critical equipment. So indigenous skill has been developed in the processing technology.
6. More than 21 entrepreneurs are involved in Oil Palm Development Programme in the country of which four entrepreneurs are operating in more than one state. They are very confident that oil palm can be grown successfully and profitably if some shortfalls identified are removed.
7. Lot of employment opportunities could be developed in cultivation and processing of oil palm.
8. Since 26 processing units have been set up in rural areas, the socio economic situation in the rural areas around the factory zones has increased and livelihood security has been assured to thousands of skilled and unskilled people.
9. In addition to the above, there are possibilities for allied industries which will further help in generation of employment and income.
10. Indian oil palm is contributing as on today 3.5 lakh ha of forest through oil palm since the crop remains for more than 30 years. If 2.0 million ha is going to be brought under oil palm. that much forest will be created over a period of time.
11. Indian oil palm is being developed using agricultural lands and it is unique in the world with no deforestation. So, it is beyond the scope of any criticism and threat from the environmental, development and nongovernmental organisations (NGOs) predominantly based in Europe, USA or in any other country which Malaysia and Indonesia are facing during last 15 years.
12. Dr.Chadha and Dr.Rethinam Committee reports also paved way for setting up of a Research Institute for Oil Palm to give adequate support to farmers.
13. Over a period of time, we could develop six hybrid seed gardens to produce tenera hybrid seeds in the country and could reduce the import of planting materials.

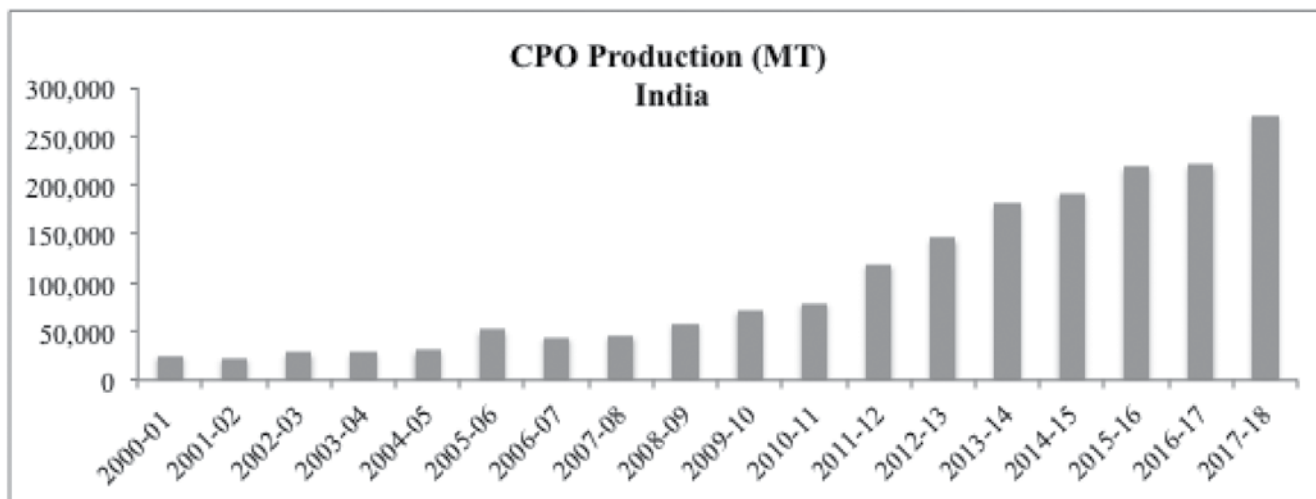
#### Country wise yield of Oil Palm FFB and India's Position

The country wise FFB yield /ha indicate that except the top three countries like Nicaragua, Thailand and Colombia, all other countries are below 20 t/ha. Normally the yield is worked out based on the matured harvested area. In India, if we work out leaving the five years old planted area from 2015 to 2019 and then calculate the yield, we will also be within top 10 countries. A correct assessment is yet to be made. However, in all the states where oil palm is at matured stage (seven years and above), many farmers harvested more than 20 t FFB/ha/year and up to 35 t/ha and the highest small holder yield was 50 t FFB /ha. This is a clear indication that the identified areas by the committees are suitable for growing oil palm successfully under irrigation.

The FFB and crude palm oil (CPO) production from 2000-01 to 2017-18 depicted in Fig. 16 and 17 had shown the increased trend over years as the matured area and age were increasing.



**Fig. 16. FFB Production from 2000-01 to 2017-18**



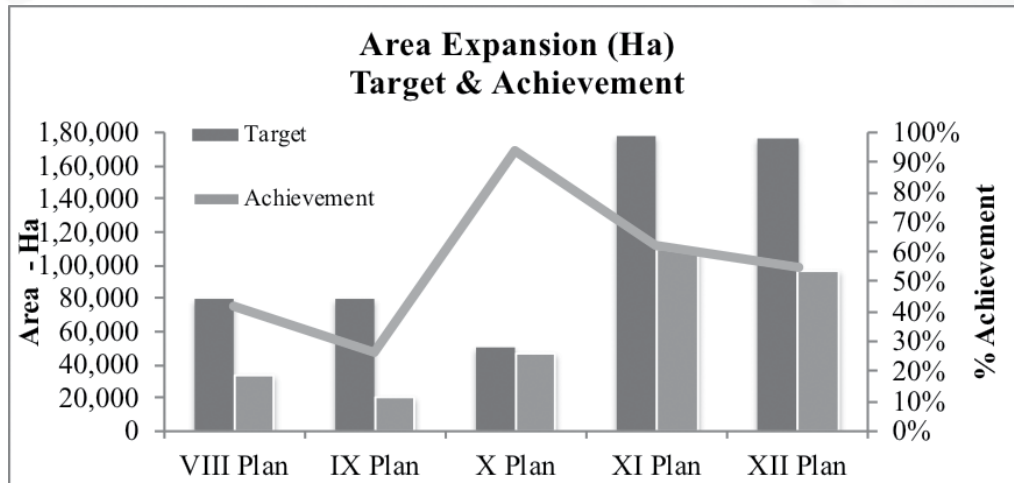
**Fig. 17. CPO production in India**

The present situation of 1.0 t CPO /ha can be trebled in next three years if we rejuvenate the existing plantations and the processing industries as well as the respective state government take serious step. This is only a short term effort which can be done easily.

## 8. Lessons to be learnt from past to plan future

8.1. The targeted area expansion had never been achieved as could be seen from Fig.18 as well as during NFSM period.





**Fig.18. Area Expansion –Target and achievement during different Five Year Plans**

The above situation needs to be understood that fixing higher target had not resulted in achievement and while fixing higher target in NMEO-OP 2021, the real situation has to be understood for fixing any target.

8.2. While the average FFB yield is very low, many of the farmers have obtained 20 to 30 t FFB/ha and the highest being 50 t FFB /ha. Inadequate input management was the major cause for low production.

After passing through all the stages, a New Revolution has come into force as suggested by the Hon'ble Prime Minister, India during August 2021, the National Mission on Edible oil-Oil Palm (NMEO-OP).

## 9. National Mission on Edible Oil-Oil Palm (NMEO-OP) 2021

The Union Cabinet, Govt. of India had approved the National Mission on Edible Oil-Oil Palm (NMEO-OP) in August 2021 with an objective to increase the palm oil production of the country by 2025-26. The aim of the scheme is to promote oil palm cultivation for making the country Atmanirbhar in edible oils, with a special focus on the North-Eastern States and Andaman & Nicobar Islands.

This new Revolution is different from earlier one and it is real 'Oil Palm Revolution'.

- The scheme basically aims at self-reliance in edible oil and has been allocated an outlay of Rs. 11, 040 crores over a five-year period.
- Out of this, the centre will provide Rs 8,844 crore and the states' share is Rs 2,196 crore.
- The aim of the scheme is to raise the domestic production of palm oil by three times to 11.20 lakh t by 2025-26 and to 28 lakh t by 2029-30.
- The scheme has a special focus on the Andaman and Nicobar Islands and the North-eastern region of India.
- The scheme has been announced at a time when the prices of edible oils have been rising over the past few months.
- There was a 52% hike in the prices in July 2021 compared to the same time last year.
- It is proposed to have an additional 6.5 lakh ha for palm oil by 2025-26. The ultimate target is to reach 10 lakh ha.

- The National Mission on Oilseeds and Oil Palm (NMOOP) had been launched by the GOI during 2014-15. From 2018-19, the NMOOP was merged with the National Food Security Mission (NFSM) as NFSM-OS&OP. The new scheme NMEO-OP will subsume the NFSM-OS&OP.

## **The main features of NMEO-OP**

Under this mission, farmers who opt for palm oil cultivation will receive price assurance from the government which will hedge the farmers from price volatility.

- This is a Minimum Support Price-type mechanism and the government will fix this at 14.3 % of crude palm oil (CPO) price.
- This will eventually go up to 15.3%.
- This price assurance given to the farmers is called the Viability Price (VP).
- VP is the annual average CPO price of the last 5 years adjusted with the wholesale price index to be multiplied by 14.3 %.
- The deficiency price payment would be done through direct bank transfer to the farmers' accounts.
- To provide additional assistance to the cultivators of the Northeast and the Andaman & Nicobar Islands, the government will bear a cost of 2% of the CPO price to ensure that the farmers are paid at par with the rest of the country.
- Another focus area of the scheme is to substantially increase the support of inputs/interventions.
- To replant old gardens for their rejuvenation, special assistance will be given at the rate of Rs 250 per plant.
- Assistance for planting material for oil palm has been increased from Rs 12,000 per ha to Rs.29,000 per ha.
- Maintenance and intercropping interventions also see a substantial increase.
- Seed gardens will be given assistance up to Rs.80 lakhs for 15 ha in the rest of India and Rs.100 lakhs for 15 ha in North-East and Andaman regions.
- To attract industry to the NE and Andaman regions, a provision of Rs 5 crore of 5 mt/hr unit with pro-rata increase for higher capacity will be given.
- The scheme also has a sunset clause which is November 1, 2037.

The Oil Palm Revolution, which is presently started needs the following:

- Focussed priorities,
- Technology driven oil palm cultivation and processing to get more FFB. OER and CPO,
- Attention and Effective/critical Monitoring.

This Revolution, which our beloved Prime Minister had mooted now should bring success like that of Green Revolution and White Revolution. A few suggestions are proposed out of three decades of observations which may be considered if deemed fit.

1. Assess and consolidate the existing planted area so far.

The very first small holders' plantations under DRDA as well as DBT plantations are now more than 30 years old and require need-based replanting as part of replanting programme.

We have achieved about 3.85 lakh ha planted in 12 states including North East region over a period of 30 years under DRDA, OPD by DBT and OPDP by the Ministry of Agriculture and Family Welfare, New Delhi.

It should be reassessed. Every state government and the entrepreneur should, on priority, assess the present state of affairs and rejuvenate the existing plantation with input management like water and plant nutrition.

So taking care of the existing plantation by rejuvenation, replanting and adopting technology-based cultivation like proper manuring, irrigation by drip/ fertigation will definitely increase the yield and CPO production.

2.The NMEO-OP mainly targets area expansion by bringing 6.50 lakh ha in the next five years from 2021-22 to 2025-26 of which 3.22 lakh ha in general states and 3.28 lakh ha in N.E.States to produce 35.39 lakh tons of CPO by 2025-26.

The area expansion proposed under NMEO-OP is given in Table 6.

**Table 6. Area expansion proposed under NMEO-OP**

<b>Oil palm</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>	<b>Total</b>
<b>General states</b>						
Area Expansion (ha)	40000	53000	69000	78000	82000	322000
Fruiting area (ha)	182425	193748	205659	218056	258056	
FFBs production (MT tonnes)	2138738	2514680	4199529	5399582	6599559	20852090
CPO production (MT)	362953	426942	712915	915925	1119920	3538656
<b>North East states</b>						
Area Expansion ( ha)	10000	15000	126000	152000	25000	328000
Fruiting area ( ha)	17417	21333	24686	27810	22819	31783
FFBs production (MT) @ 15 T/ha	261.24	319.99	470.25	417.15	440.92	1909.55
CPO production (MT) @ 18% OER	47.00	57.55	84.53	74.95	79.29	343.32
<b>TOTAL (General &amp; NE)</b>						
Area Expansion (lakh ha)	0.50	0.68	1.95	2.30	1.07	6.50
FFBs production (lakh tonnes)	21.39	25.15	42.00	54.00	66.00	208.54
CPO production (lakh tonnes)	3.63	4.27	7.13	9.16	11.20	35.39

### 2.1 Availability of planting materials

The area expansion programme will be linked with the availability of planting materials. Since the domestic production is only about 12 lakh seed sprouts per year with the existing seed gardens, import is necessary to meet the target given in Table 7.

**Table 7. Requirement of oil palm seedlings**

<b>States</b>	<b>Approximately requirement of seedlings as per target (lakh no.) @ 150 seedlings/ha</b>					
	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>	<b>Total</b>
Rest of India (RoI)	60	79.5	103.5	117	123	483
NE states	15	22.5	189	228	37.5	492
<b>Total</b>	<b>75</b>	<b>102</b>	<b>292.5</b>	<b>345</b>	<b>160.5</b>	<b>975</b>

The requirement of seedlings shown above clearly indicate that the present domestic availability of sprouts from the existing seed gardens is only about 12 lakhs and can go up to 34 lakhs by 2024-25 and 55 lakhs by 2028-29 since additional seed gardens already established also will come to production, and more seed gardens are also in the pipeline. But any new seed garden will take another 10 years to produce seeds.

Therefore, only imported planting material alone has to play key role in achieving the target. Any sprout imported today will take 15 to 18 months for field planting. Since everybody is rushing to import, internal quarantine has to play an important role to monitor the imported planting material.

Due to increased demand for the oil palm seedlings, some unscrupulous elements are trying to exploit the situation by bringing spurious and uncertified seedlings raised from the dropped fruits of plantations of North East region and selling them to the gullible farmers in the southern states. As the performance of these seedlings is not assessed scientifically, selling of such spurious seed need to be curbed immediately.

It is time now to assess the achievement in area expansion during 2020-21 in all the states and understand the problem faced and based on the experience gathered, corrective measures are to be taken up.

Our immediate attention should be to rejuvenate the already existing seed gardens. Problems and shortfalls are to be identified and set right immediately so that the seed production can be increased in a short period.

As far as establishment of new seed gardens are concerned, instead of so many seed gardens in every state, Regional Seed Gardens in every region with all facilities and with proper expertise and with selected duras and pisiferas (t x t) are to be considered. Promising parental planting materials also can be imported for future seed gardens, in addition to exploiting domestic availability.

2.2. The financial assistance for drip system of irrigation should be made 100 %, but now the fund is allotted only for 50% of area. The drip irrigation should be made mandatory for both the existing and new planting areas. By such an approach, the large-scale criticism of water depletion by oil palm can be avoided. The innovative technologies available are to be adopted by the farmers.

2.3. Collective / group farming concept is to be encouraged so that a community approach can be formed which will be easy taking up timely input supply, adopting plant protection, harvesting, mechanisation, transport to processing centre as well as ensuring timely availability of technical help. Service providers are to be encouraged so that small and marginal farmers can avail the facilities of machineries, harvesters etc.

2.4. No middleman should be involved either in procuring sprouts from other countries or within the country and also for procurement of FFB from farmers. The present position should be continued.

2.5. Timely release of funds from Centre to state and from state to the beneficiaries is to be ensured and effectively monitored.

As far as North Eastern Region is concerned for easy transport of FFB and inputs, farm roads are to be formed on priority basis. Village roads like 'Cess Fund Roads' constructed in sugarcane planted areas could be considered under Rural Development Programme and the fund allotted can be made

use of for making roads. The Grama Panchayats and Rural Development Departments can join hands in this effort. Inputs supplies are to be made available on time.

2.6. In the East and North East regions, many farm ponds, rivulets, natural water harvesting structures etc., are available, which need regular de-silting and deepening. They can be used for irrigating whenever the rainfall is inadequate.

2.7. Inter/mixed/multiple / multi-storied cropping and mixed farming systems already developed and tested can be advocated to farmers to get income in the juvenile period (early growth phase) of oil palm as well as additional income during matured period. This will also generate lot of organic bio mass for recycling thereby reducing inorganic fertilizer use and help to maintain soil health. In the North East, it is also suggested to provide a milch cow to farmers who desire to maintain so that organic farming is also made possible for which detailed planning may be made and executed.

2.8. Perennial-cum-annual oilseed cultivation is possible in the new oil palm expansion areas. More than one million ha annual oilseeds can be grown over a period of time.

2.9. Set up separate cell to monitor activities in the state and specifically identified officers to monitor at field level and to provide technical assistance. Proper and timely payment of subsidies is to be ensured. Though many Committees have been constituted at various levels, there is need for a proper 'Technical Advisory Officer' to guide the programme at all levels.

## To Conclude

The NMEO-OP has lot of financial support for various items for taking up Smart Oil Palm cultivation. The price for FFB is also good which had affected oil palm cultivation now and then and farmers felt unsecured. Now that has been removed. Oil Palm is the answer to reduce the import of vegetable oil and import expenditure and to reach self-sufficiency.

As far as annual oilseeds are concerned, breaking the yield barriers and increasing the productivity through new varieties which can withstand biotic and Abiotic stresses, replacement of old low yielding varieties with high yielding varieties, faster multiplication of seeds, increasing the area under irrigated conditions by including oilseeds in the cropping system in the irrigated land, crop rotation, relay cropping, rice fallow sowing, technology driven cultivation of oilseeds and assuring remunerative prices comparable with other competing crops, improving the Processing efficiency will help definitely help to increase vegetable oil Production.

Working towards the 'National Mission on Edible oils - oil palm' with these two pronged approaches will definitely help to increase the domestic production of vegetable oil and reduce import. Right man with right and timely implementation will lead to success (.Thirukural 517).

'This man, this work shall thus work out; let thoughtful king command;  
Then leave the matter wholly in his servant's hand.

(Thirukural 517)

Explanation:

After having considered, "this man can accomplish this, by these means", let (the king) leave with him the discharge of that duty.

## BRIEF PROFILE OF AUTHOR

Dr. P. Rethinam, doctorate in Agronomy. Worked with All India Agricultural Service, All India Coordinated Research Project on Palms. He has been instrumental for getting the coconut hybrids and varieties released for the first time in India. He served as Assistant Director General, Plantation Crops in Indian Council of Agricultural Research He was also the Founder Director of the National Research Center for Oil Palm. He was the Chairman of the committee nominated by Govt. of Karnataka to identify Potential areas for growing Oil Palm in 1985. He also functioned as Ecosystem Director for the Coastal Ecosystem under National Agricultural Technology Program (NATP). He coordinated and formulated various research programs in agriculture, horticulture, animal science, fisheries, etc. He has been the Chairman, Coconut Development Board, Ministry of Agriculture, Kochi, Executive Director of Asian and Pacific Coconut Community He brought out many publications like books, technical bulletins, and research popular articles.

He was conferred with Dr. M H Marigowda National Award for best horticulture research by the University of Agricultural. Science Bangalore in the year 2008 and Udyan Ratan Award by Lt. Amit Singh Memorial Foundation in 2009 for good farming and Dissemination of technologies to farmers through demonstrations in his farm. International Conference on Coconut Biodiversity held in October 2010 awarded a Certificate of Recognition for the Contribution made in Coconut Research and Development both at National and International level. He was conferred with HSI-Sivashakti Life Time Achievement Award 2010. He also got Achievers' Award in 2010 by AIPUB.

He served as Chairman, QRT for NRC for Banana and Chairman, Research Research Advisory Committee for CPCRI, Kasaragod and RAC National Research Centre ,Banana, Trichirappalli; Project Directorate Cashew, Puttur; CTCRI Thiruvananthapuram. Member RAC for ICAR Research Complex. Goa. He was the Chairman of QRT for Directorate of Oil Palm and Advisory Committee Member, Natural Resource Management Expert committee, NAIP, ICAR. New Delhi and Chairman, CAC for banana fibre Value Chainnet work project of NAIP, Navasari Agricultural University. He is also Advisor and RAB Member in World Noni Research Foundation.

# SUSTAINABILITY MUST BE AT THE CORE OF INDIA'S NATIONAL OILSEED MISSION



**PIYUSH PATNAIK**  
EX MANAGING DIRECTOR

CARGILL'S GLOBAL EDIBLE OILS BUSINESS - INDIA, MALAYSIA & AUSTRALIA

India, a major developing and growing economy with a large agriculture sector, is at the forefront of a critical and continued battle to save the planet. Climate change and sustainable agricultural practices are not mutually exclusive. Government and private institutions are investing in efforts to focus on sustainable agriculture practices to address climate change. Working with farmers and introducing sustainable agriculture practices can go a long way to solve today's climate-related challenges.

The Central Government's National Mission on Oilseeds and Oil Palm (NMOOP) is one of the many initiatives that have germinated out of the nation's quest to achieve food security, climate resilience, and farmer livelihood enhancements. One of the goals of this ambitious mission is to increase the production of edible oils and bring nearly 75,000 hectares of area under palm cultivation.

While the mission rightly looks to augment the domestic supply of edible oil, this must be achieved sustainably and responsibly, prioritizing our natural landscapes.

## Sustainability through partnerships

The NMOOP aims at bringing 1.25 lakh hectares under oil palm cultivation through area expansion. There are plans to turn wastelands into palm plantations and to encourage intercropping of oilseeds with cereals/pulses and sugarcane. Based on Cargill's global experience of operating palm plantations, offering a range of

farmer services and risk management solutions, and our significant expertise in handling identity preserved and differentiated products, we believe that the mission to expand oilseed and palm oil land should have sustainability at its core.

Forests and farming are both critical to creating a more sustainable and food-secure future. Promoting balanced land use and adopting sustainable agriculture practices to protect forests is vital. The primary goal should be to mitigate agriculture as a driver of deforestation. While the vision set under NMOOP is pertinent for expanding the development of oilseeds, measures undertaken to achieve it must be carefully examined.

For example, as per the Centre for Ecological Sciences at the Indian Institute of Science, Bengaluru, an anticipated increase in temperature due to global warming and augmented artificial irrigation suggest that India has an area varying from 7.86 million hectares (Mha) to 73.26 Mha suitable for successful plantation of palm oil. However, it is concerning that 45-60 percent of these palm-suited areas are of high ecological value and the rest which are non-biodiverse is largely under rice cultivation. The study recommends that converting rice fields that produce less than two tons of rice per hectare to palm oil can be a viable trade-off. It stressed the conversion of small paddy fields as a viable alternative to deforestation and grassland conversion for palm oil.

Soil is a living, breathing ecosystem that does more than simply provide nutrients for plant growth. Healthy soil uses plants' photosynthesis to pull carbon from the atmosphere, improves water quality, increases drought resilience, and enhances farmer livelihoods. That's why Cargill is focused on unlocking the potential of farmland and natural ecosystems, with targeted supply chain interventions, advancing regenerative agriculture practices and systems, and policy solutions that benefit farmers, customers, and the broader food system. Cargill is working with partners, customers, and other stakeholders across the supply chain to implement soil health practices and advance regenerative agriculture to the benefit of farmers, ranchers, and customers and create a more resilient, sustainable food system.

A fair assessment of land is possible when all stakeholders across the value chain are involved in the process of development. After all, sustainability is a shared responsibility. And therefore, partnerships between the public and private sectors, including government, industries, and academia is central to fulfilling NMOOP goals. As already witnessed across other sectors, in today's interconnected world, multi-stakeholder collaboration is needed to make a difference across global supply chains. This would incorporate capacity building and enforcement of good regulatory practices both in terms of sustainability and food safety.

### **Health is and always will be a priority**

With unsafe food containing harmful bacteria, viruses, parasites, or chemical substances causing more than 200 diseases – ranging from diarrhea to cancers – food safety concerns all of us, every single day. Everyone has a role to play to ensure the food we eat is safe.

India is heavily dependent on imports to meet its edible oil requirements and is the largest importer of vegetable oils in the world followed by China and the USA. Of all the imported

edible oils, the share of palm oil is about 60 percent. Domestic edible oil production has not been able to keep pace with the consumption growth. During 2019-20, domestic production of edible oils was 10.65 million tonnes from both primary (oilseeds) and secondary sources (coconut, oil palm, rice bran oil, cotton seed oil, and TBOs). [1]

In this scenario, the NMOOP should also address the quality of the produce, along with the quantity of oilseeds produced indigenously. The pandemic has changed the way people look at food. Two things are happening. People want a higher quotient of health and nutrition in their food basket, but they might not be able to stay away from fried food, hence they want access to healthy oil. And secondly, people want a specific amount of supplements now. High-quality fortified oils are certainly the need of the hour to meet this growing demand at home.

With food research and innovation centers, local food application facilities, and product development centers, Cargill has a window into the world. Our global presence enables us to stay at the forefront of emerging customer needs and solutions and bring important new knowledge to our customers and consumers. An example: consumption of industrially-produced trans fats has been linked to around 500,000 deaths per year due to coronary heart disease. The World Health Organization (WHO) has set an ambition for the world to be trans-fat-free by 2023. Cargill was the first organization in the world to commit to WHO's recommendations on trans-fatty acids (tTFAs) across its entire fats and oils portfolio, including in countries where there is no legislative requirement to do so.

### **Towards a responsible future**

Creating resilient farm communities, and empowering individuals to be their leaders and adopt sustainable and responsible measures for their success, should be the focus of all agricultural policies and missions.



Farmers are the key to protecting our lands for future generations. Without their partnership, we can't effectively address the challenges we currently face. It is therefore critical to provide farmers with training programs and innovative new processes and products to drive changes in our supply chains. It is equally important to work with key stakeholders like customers, industry groups, NGOs, and governments to help scale efforts across the country.

There is no single solution to address the challenge. That's why the approach must include initiatives that protect the land, invest in regenerative land practices, restore previously converted land, and continue to innovate with programs and solutions that can drive long-

term change. A renewed focus on quality and quality is critical to these efforts and to nourish the world in a safe, responsible, and sustainable way.

The rapid expansion of domestic palm oil plantations cannot be achieved at the expense of biodiversity and rich landscapes. Combined efforts of all stakeholders such as large food companies, governments, and the society at large will be able to create a responsible future, where sustainability is the only right way forward.

[1][https://agricoop.nic.in/sites/default/files/Web%20copy%20of%20AR%20%28Eng%29\\_7.pdf](https://agricoop.nic.in/sites/default/files/Web%20copy%20of%20AR%20%28Eng%29_7.pdf)

## BRIEF PROFILE OF AUTHOR

*Piyush Patnaik is the Ex Managing Director of Cargill's Oils business for India, Australia, and Malaysia. He has been with Cargill for over for a decade and a half and brings with him 18 years of industry experience. In his current role, he is responsible for driving profitable growth across consumer and customer segments for the company.*

# WORKING TOWARDS NATIONAL MISSION ON OILSEEDS



ADITYA JERIPOTULA

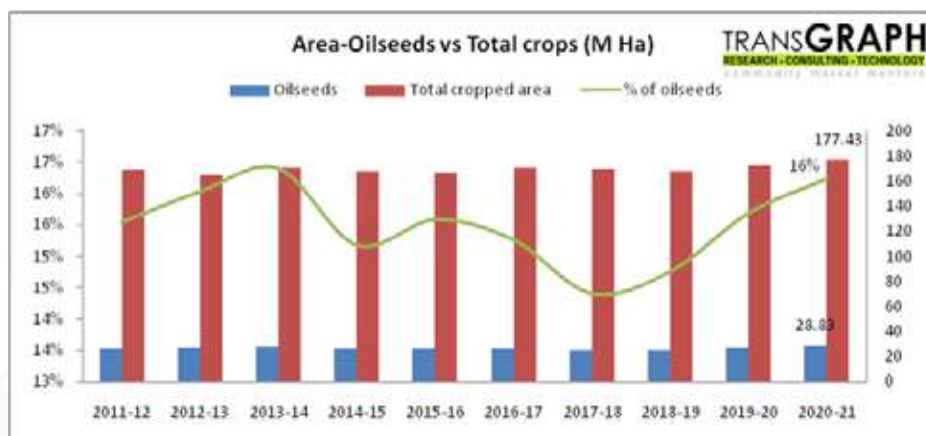
With the help of a widespread vaccination campaign in 2021-22, India was able to recover from the recent economic drag caused by corona pandemic and return to normalcy, but it was still negatively impacted by other significant macroeconomic factors, such as the Russia-Ukraine war and frequent changes in Indonesian export policies.

While Indonesia is the largest producer of palm oil, Russia and Ukraine are the leading producers of sun oil. This has affected the availability of edible oils around the world and driven the prices to all-time high. Additionally, the high prices of vegetable oils have added up to the inflation. Furthermore, India purchased edible oil worth \$18 billion, widening the country's trade deficit. All the uncertainties increased the India's need to decrease its edible oil import dependence.

## Overview of Indian Edible Oil Supply And Demand:

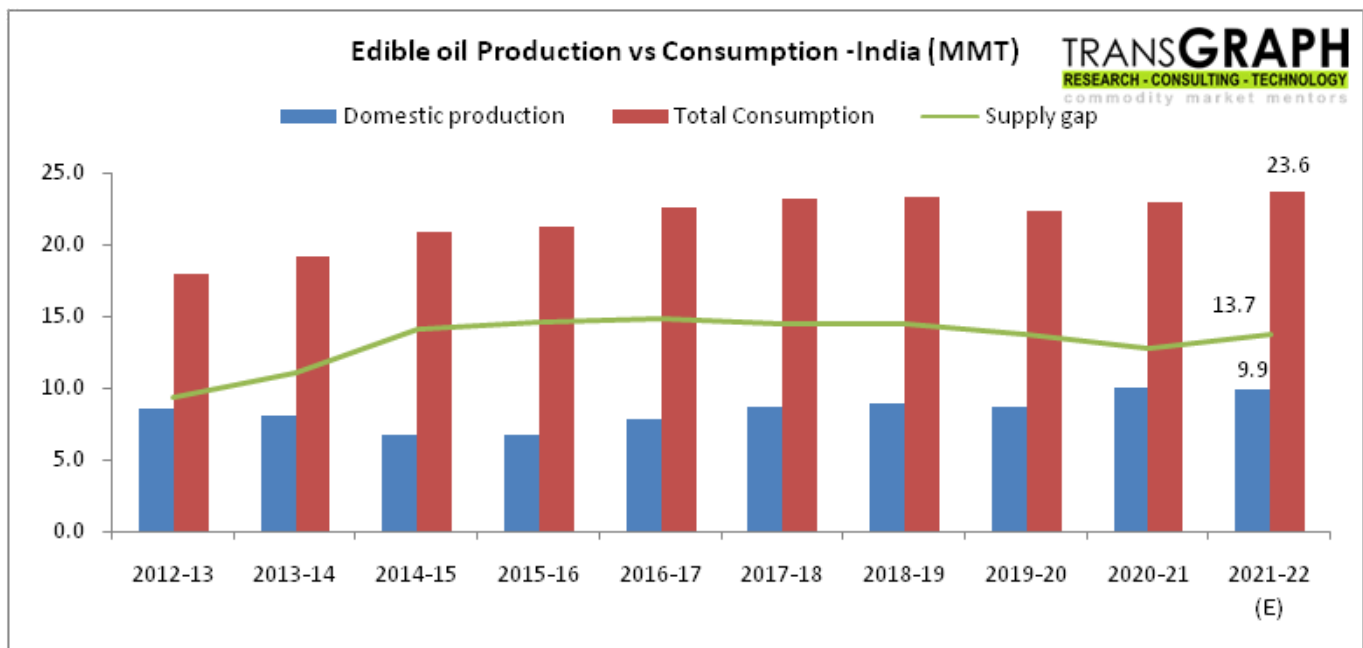
India accounts for about 15-20 % of global oilseeds area but only produces 6-7 % of vegetable oils production. Total area under oilseeds has stayed in the range of 24-29 M Ha over the last 10 years accounting to 15-16% of total cropped area. With slight improvement in the area and yield, production has improved from 27.35 MMT in 2011-12 to 34.2 MMT in 2020-21.

Though Indian oilseed yields have improved by over 10% in the past decade, domestic yields are only 1/3rd compared to major oilseeds producers such as USA, Argentina, Brazil, Canada, etc. In India more than 85% of the oilseeds are grown under rain-fed conditions with poor management practices by small and marginal farmers causing the yields to stay lower. Lack of high yielding varieties is also impacting the productivity of oilseeds. Lower yield of oilseeds in India is the major concern creating a huge supply gap with growing consumption.



Indian edible oil consumption has increased at a CAGR of 3% over the last decade. However the production of edible oil declined during early part of the decade and started to improve from 2015-16 reaching 8.7 MMT in 2019-20. During the same period country's dependency on edible oil imports increased from 10-11 MMT to nearly 15 MMT in 2018-19. Outbreak of Covid-19 led the edible oil demand to decline during 2019-21 and Indian edible oil production improved by nearly 15% to 10.1 MMT reducing the supply gap (consumption-production) to 12.8 MMT, lowest in 7 years.

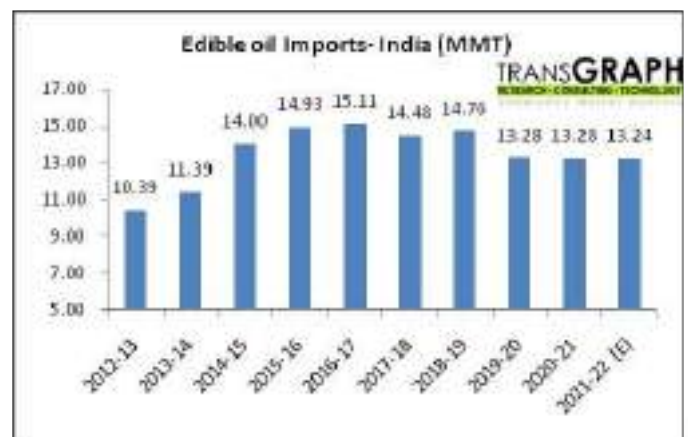
Cooling prices would increase edible oil consumption in 2021-22 to 23.6 MMT, higher by 3% Y-o-Y. Lower crushing would result in marginal decline of oil production by 1% Y-o-Y to 9.9 MMT increasing the supply gap to 13.7 MMT during 2021-22, making India dependant on imports for more than 55% of its edible oil consumption.



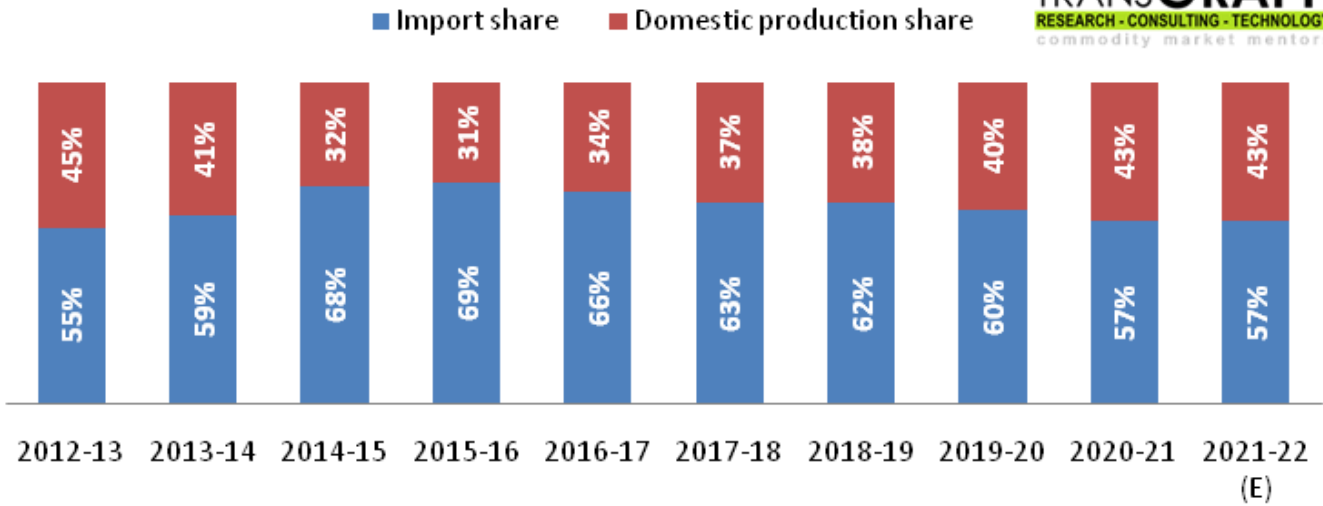
### Edible oil Imports- India:

On an average India imports more than 1MMT of edible oil every month with palm oil, soy oil and sunflower oil contributing to nearly 98% of the edible oil imports. India majorly depends on Indonesia & Malaysia for palm oil, imports soybean oil from Argentina & Brazil and sun oil from Ukraine, Argentina and Russia.

With improvement in the domestic production, Indian edible oil imports started to decline from a peak of 15.11 MMT in 2016-17 to 13.24 MMT in 2021-22 decreasing its dependency on edible oil imports from 66% to 57% of total edible oil supply during the same period.



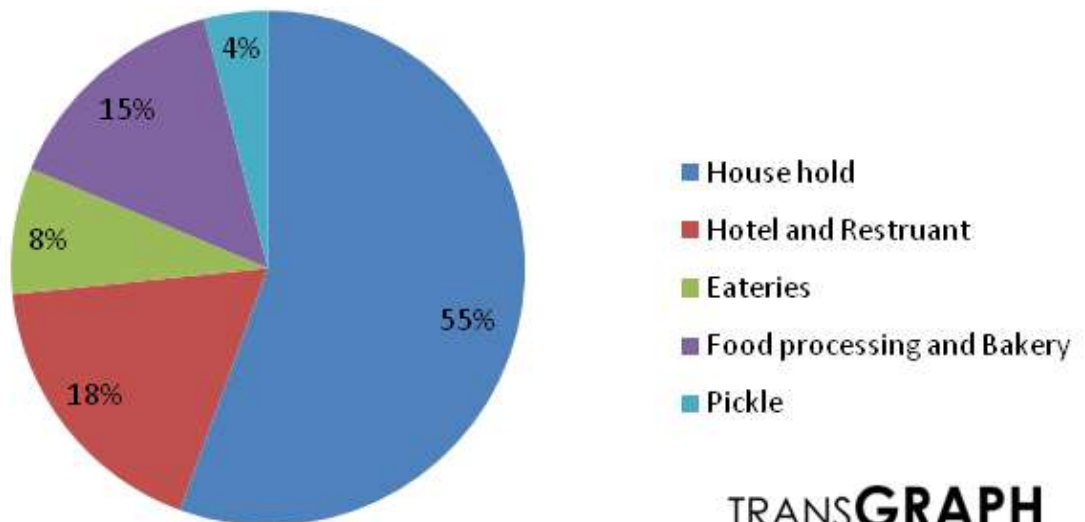
### Imports v/s Domestic supply of oilseeds - India



### Sector wise- Consumption:

In India, household sector consumes more than 55% of edible oil, followed by HoReCa sector (18%), food processing and bakeries (15%), eateries (8%), and pickle industry (4%). As a result of the economy's reopening in 2022, recovery in the tourism and hospitality sector raised edible oil consumption in the HoReCa sector and increased its share in edible oil consumption from 9% in 2020 to 18% in 2022.

### Sector wise oil consumption - India



## **Atmanirbhar in Oilseeds:**

India has ample resources to produce sufficient quantity of oilseeds, but the bottlenecks in Indian agricultural practices have restricted the production growth. Soy bean and mustard are the major oilseed crops grown in Kharif and Rabi season contributing 50% of total domestic oil production.

In order to achieve self-sufficiency in edible oils, India need to bring an additional area of nearly 40 M Ha under standard oilseeds such as Mustard, Soybean and groundnut (if increased equally). This would reduce the area under staple food grains; which might even more threaten the country's food security. So in order to achieve self-sufficiency in edible oils, better choice is to improve the area under high yielding crops such as oil palm. Oil palm can yield 10 times oil than mustard crop cultivated in the same area.

## **Way Ahead:**

Major oil seed crops such as soybean and mustard have given a net realization ((Revenue-Cost of Cultivation)/Cost of Cultivation) of > 100% compared to < 50% net realization in cereals and pulses during 2021-22 which would encourage the farmers to prefer oil seeds over other food grains. Higher stocks in 2021-22 would improve oilseed availability for crushing in 2022-23 which would also contribute to higher oil production. In 2022-23, vegetable oil production is expected to increase by 10% Y-o-Y to nearly 11 MMT.

With GDP growth pegged at 6-7% in the coming year leading to higher disposable income would increase the edible oil consumption by 2% Y-o-Y to 24.3 MMT. Higher production of vegetable oil would reduce the supply gap by 400 KMT Y-o-Y to 13.3 MMT. Though edible oil imports are expected to increase by 2% Y-o-Y to 13.54 MMT, the share of imports in total supply would decline to 55% from 57% in the previous year.

Government of India is consciously taking various steps in order to make India self sufficient in edible oils. Government launched National Mission on edible oils-oil palm in 2021 to bring additional 0.65 Million Ha under oil palm by 2025-26, allocating INR 11040 Crore. Government targeted to increase crude palm oil production to 1.1 MMT by 2025-26 and eventually to 2.8 MMT by 2029-30. Government also increased the Minimum Support Price on oil seeds with a CAGR of more than 10% during the previous decade and is expected to increase with a similar pace in the coming years.

Along with economical support to farmers, government is encouraging the research institutions to develop high yielding varieties and also making efforts to develop varieties resistant to Biotic (pests & disease) and Abiotic stress (drought, excess rainfall, etc.). Introduction of GMO seeds would also help in improving the yield of major oilseeds such as soybean and mustard. These factors would increase the domestic edible oil production by at least CAGR of 5% in the next decade.

## BRIEF PROFILE OF AUTHOR

*Aditya Jeripotula, AVP, Global Agri Commodity Research at TransGraph Consulting Pvt Ltd, Hyderabad. Currently in the role of Head of Edible Oils Research.*

*A Mechanical engineer by qualification, completed Executive Programme in Algorithmic Trading by Quantinsti Quantitative Learning and Post Graduate Certificate in International Business and Finance by IIFT.*

*Mr Aditya has +15 years of experience in Global Commodity Trading and Research. Worked with Futures First info services for 10 years, with Unicorp infosolutions for 6 months and currently working with TransGraph Consulting for the past 5 years.*

*Traded derivatives on CME and ICE, an expert in Technical Analysis and has a strong hold on fundamentals of commodities - Agri, Metals and Energy.*

# WORKING TOWARDS NATIONAL MISSION ON OILSEEDS



**SANDEEP BAJORIA**

India is one of the major producer of oilseeds in the world accounting for about 20% of the World’s area under oilseed crop and 9-10% of World’s oilseed production. It is the 4th largest oilseeds producing economy in the world after USA, China and Brazil. The various oilseeds produced in the country are soybean, groundnut, rapeseed and mustard, sesame, sunflower, safflower etc. Then there are others like copra and cottonseed. This Association, namely All India Cottonseed Crushers Association, (AICOSCA) represents the cottonseed sector. The following table shows the production of major oilseeds in the country from the years 2018-19 to 2022-23.

**Table**

## **India: Production of Major Oilseeds**

(Million Metric Tonnes)

<b>Oilseeds</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23 (P)</b>
Soybean	10.93	9.30	10.45	11.90	11.5
Groundnuts	4.68	6.26	6.7	6.8	7.0
Rapeseed	8.0	7.4	8.5	10.80	11.0
Sunflower	0.17	0.14	0.19	0.19	0.20
Cottonseed	10.99	12.15	11.74	10.50	-
Others/Copra	0.77	0.77	0.77	0.79	0.80

From the data presented above, it will be seen that though there has been an increase in production of all major oilseeds, cottonseed production is now the highest in the country in terms of production tonnage, that is higher than the production of major oilseeds like soyabean, groundnut and rape and mustard.

### **Oilseed crops in India - Demand & Supply Scenario:**

India is one of the largest producer and consumer of edible oil in the world. Despite that, the country is heavily dependent on import to the extent of 65% of its domestic requirement of edible oil, spending annually about Rs. 85,000/- crores (12 billion US dollars) to import 13-14 million tonnes of edible oil to increase domestic availability, as against 4% in 1998-99 - almost self-sufficient. As such, decreasing the dependence on import and increasing the domestic oilseed production, to make the edible oil sector self-sufficient is the most important need of the hour. To make the edible oil sector self-sufficient i.e. to achieve the economic self-sufficiency, the country has made

several attempts in the past like increasing the area under oilseeds, developing new varieties and technologies to increase the productivity and total production of oilseeds. (As per current data, the domestic production meets only 35% of the consumption demand and the remaining is met through import causing a substantial burden on the exchequer). Programmers like Technology Mission on oilseeds was started as early in 1986, with four micro missions, to provide the necessary impetus for increasing area and production of oilseeds. As per past data, the production of oilseeds had increased from 9 million tonnes in 1980-81 to 32 million tonnes driven both by area expansion (from 17 million hectares in 1980-81 to 25 million hectares in 2018-19) and yield increase from 532 kg/ha in 1980-81 to 1200 kg/ha in 2018-19. However, majority of the oilseeds in India suffer from lower yield compared to the world average and more or less same situation of higher imports continued.

### **Productivity of Oilseeds in India:**

India's oilseeds productivity kg/ha vis-à-vis World average shows that the productivity of all annual oilseeds crops are lesser than the world average. In spite of the fact that many varieties and technologies have been developed, very little progress has so far been made on the productivity front. Again as per views of edible oil experts, more than 72% of annual oilseed crops are grown under rainfed conditions and hence are subject to vagaries of monsoon.

### **Attaining self-sufficiency in edible oil was every body's concern at one point of time:**

The above will be clear from the following:

- (i) Hon'ble Prime Minister, Shri Narendra Modiji appealed on 23 July 2020 to the farmers in the North East States to take up Oil palm cultivation in a big way. It is a step to support the 'Atmanirbhar Bharat' initiative and will reduce the imports of Palm oil and make India self-sufficient in edible oils too.
- (ii) Noted agricultural economist Dr. Ashok Gulati, Infosys Chair Professor at the Indian Council for Research on International Economic Relations (ICRIER) in New Delhi opined that if India wants to produce as much edible oil as it is consuming through its traditionally-grown oilseeds, the country may need at least 30 million ha of area for cultivating them and this is next to impossible. India currently meets 65% of its edible oil needs through imports. Of India's total edible oil imports, 75 % is palm oil. According to him, Oil palm is the only tree that can give 4 tonnes oil per hectare. In comparison, other edible oil complexes do not give even 400 kg of oil per hectare.
- (iii) Union Finance Minister, Smt. Nirmala Sitharaman reiterated Government's plan to focus on growing more oilseeds to cut down the swelling import bills of edible oil. The Finance minister, while hailing pulses farmers for sustainable growth in pulses production, has called upon farmers to produce more oilseeds.
- (iv) According, to Mr. Sudhanshu Pandey, Secretary Food, GOI indicated three suggestions to meet the requirement which were: increase the area under cultivation by 23%, increase productivity by 25% and overall production by 55%.
- (v) India spends over Rs. 70,000 crores annually to import about 15 Million Tons edible oil to meet



its annual requirement of 25 MT, making it one of the biggest buyers of the cooking medium. The need for a “zero edible oil import” plan was discussed by the then Union Commerce Minister, Shri. Piyush Goyal at an inter-ministerial meeting.

According to the report of the Committee on doubling farmers’ income.

Under the Government’s plan to double farmers’ income, achieving self-sufficiency in oilseeds production by 2030 was a major target “The strategy for self-sufficiency should encompass all three sources of oils – seven edible oils (soybean, rapeseed-mustard, groundnut, sesame, sunflower, safflower and niger) and two non-edible (castor and linseed) oilseed crops, all of nine (9) constituting the primary sources; secondary sources (rice bran, cotton seed, solvent extracted oils); and tree borne oils (TBOs), namely, palm oil, coconut, other tree and forest origins,”

(vii) The Department of Agriculture had set a target of first increasing oilseed production from primary sources from the current 31 million MT to 45 million MT by 2022-23. This was expected to help to increase the edible oil production in the country from 7.1 million MT to a range of 11-14 million MT. Contribution from secondary sources and TBOs were likely to add another 3 million MT, restricting the import dependency to about 16 million MT, which otherwise would be much higher by 2022-23.

## **Working towards National Mission on Oilseeds**

As stated in the foregoing pages, since 1991-92, Government of India made many efforts to increase the production of oilseeds and oil palm. As a result, the oilseeds production increased from 275 lakh in 2014-15, (the year of first coming in to power of Honble Prime Minister, Shri Narendra Modi Government) to 365.65 lakh tons in 2020-21 “i.e. over the past 7 years of the present Government”, (an increase of 133%).

Very recently i.e. on 18th August, 2021, the Union Cabinet, chaired by the Prime Minister, Shri Narendra Modi approved implementation of a new Mission to be known as the “National Mission on Edible Oils – Oil Palm”, with a special focus on the North East Region and the Andaman & Nicobar Islands.

The Mission is a new Centrally Sponsored Scheme with a financial out lay of Rs. 11,040 crore of which Rs. 8844 crore is the Government of India’s share and Rs. 2196 crore is State share. As per Government, due to the heavy dependence on imports for edible oils, it is important to make efforts for increasing the domestic production of edible oils, in which increasing area and productivity of oil palm plays an important part.

**Under this scheme, it is proposed to cover an additional area of 6.5 lakh hectare (ha.) for oil palm till the year 2025-26 and thereby reaching the target of 10 lakh hectares ultimately. The production of Crude Palm Oil (CPO) is expected to go upto 11.20 lakh tonnes by 2025-26 and upto 28 lakh tonnes by 2029-30.**

The scheme will immensely benefit the oil palm farmers, increase capital investment, create employment generation, shall reduce the import dependence and also increase the income of the farmers.

The Prime Minister has said that the above Cabinet decision will be a “game changer” as it comes to help oil palm farmers and creating an “Atmanirbhar Bharat”.

Thus, from the above analysis, it may be stated that the Government’s “National Mission on Oilseeds” is likely to become a reality soon.

Incidentally, recently while delivering the welcome address at the “Globoil International 2022” in Dubai on 10th May, 2022, Shri Atul Chaturvedi, President, Solvent Extractors’ Association of India, said the following:

**“With Edible price going up” the long delayed thrust on augmenting oilseed production domestically may finally be given the importance it deserves.**

**“National Mission on Oilseeds is likely to become a reality,” said Shri Chaturvedi**

## BRIEF PROFILE OF AUTHOR

Shri Bajoria is the Chairman of the All India Cottonseed Crushers’ Association, Mumbai, Past President, The Central Organization for Oil Industry & Trade, New Delhi, Past President of the Solvent Extractors’ Association of India, Mumbai. His business interest in India are in manufacturing and services globally.

Shri Bajoria has effectively represented oilseed industry before govt. committees and has led various delegation to various South Asian Countries, UK, Brazil. He has also been nominated on ‘National Oilseeds & Oil Development Board’ and ‘Cotton Advisory Board’.

# OILSEED ECONOMY IN INDIA



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## Pointers:-

- ▶ Oilseed crops, put together, form the second most important determinant of the agricultural economy in India, next only to cereals, within the segment of field crops.
- ▶ Mustard/rapeseed, soyabean, groundnut, sesamum, linseed, niger seed, sunflower seed, safflower seed and castor seed are the nine major cultivated oilseeds in India (as per the Union Ministry of Agriculture and farmer's Welfare) and are known as primary sources of vegetable oils. Cottonseed, coconut and palm are the secondary sources of vegetable oils along with some tree-born oilseeds like mahua and salseed.
- ▶ After China, India is the second largest producer of groundnut and is third in position in the production of Rapeseed/mustard after China and Canada.
- ▶ Major Oilseeds Producing Areas in India are: Rajasthan, Gujarat, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra, Karnataka, Andhra Pradesh.
- ▶ Oilseed crops are primarily grown for the purpose of obtaining vegetable oils from them. Oil content in them varies from 20% in soybeans to 40% in sunflowers and rapeseed/mustard.
- ▶ Despite being the fifth largest oilseed crop producing country in the world, India is also one of the largest importers of vegetable oils today, importing more than 50% of its edible oil requirement. India buys more than two-thirds of its total edible oil imports as palm oil or its fractions.

Edible oil being an essential part of human diet and oil cakes from oilseeds as cattle feed, development of oilseeds has been a priority area in the country. First Centrally Sponsored Scheme (CSS) - 'Maximized Production of Groundnut' was launched during 1966-67 in the states of Andhra Pradesh, Karnataka and Uttar Pradesh. This scheme was extended in other groundnut growing states like Gujarat, Maharashtra, Madhya Pradesh, Odisha, Punjab, Rajasthan and Tamil Nadu during 1967-68 and 1968-69. The scheme continued during 4th Plan (1969-74). Demonstration of Rapeseed-Mustard (R&M), Soybean, Sunflower, Niger and Castor were also initiated during 4th Plan.

An Intensive Oilseeds Development Programme (IODP) covering Groundnut, R&M, Sesame, Safflower, Linseed and Castor was launched during 5th Plan (1974-79) in major oilseed growing

states. The programme continued during 6th Plan (1984-89) with special projects on Groundnut and Soybean.

National Oilseeds Development Project (NODP) was also launched during 6th Plan period (1984-85) and continued during 7th Plan (1985-86). Technology Mission on Oilseeds (TMO) was launched in 1986 with continuation of NODP on 50:50 sharing basis between Central and State Government and a special project entitled Oilseeds Production Thrust Project (OPTP) with 100% assistance from Central Government. This programme continued under the aegis of TMOP till 2003-04 with 100% assistance under OPTP up to 1990-91 and, thereafter, as a single oilseed production programme on 75:25 sharing basis.

## The Yellow Revolution

The Yellow Revolution was launched to increase the production of Edible oilseeds in the country to meet the domestic demand of edible oils. It was launched in 1986- 1987 to increase the production of oilseeds, especially mustard and sesame seeds to achieve self-reliance in edible oils in the country. Later, the Yellow Revolution targeted nine major oilseeds that are groundnut, mustard, soybean, safflower, sesame, sunflower, niger, linseed, and castor.

The programme of oilseeds development including oil palm were re-structured and a new CSS entitled, 'Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)' was launched from 2004-05 and continued upto 2013-14 on 75:25 sharing basis. Pulses (2010-11) and Maize (2013-14) were subsequently transferred to National Food Security Mission (NFSM) and ISOPOM was re-structured into National Mission on Oilseeds and Oil Palm (NMOOP) including Tree Borne Oilseeds (TBOs) which was launched during 2014-15.

The above- mentioned development programme have contributed in enhanced oilseed production from 6.43 million tons during 1966-67 to 22.11 million tons during 1995-96 and ever highest estimated production 38.5 million tons in 2021-22 with over three fold increase in productivity from 428 kg/ ha (1966-67) to 1500 kg/ ha (2021-22) (Table-1).

Table - 1

Estimated area, production and yield of oilseed crops

Year	Area (million ha)	Production (million tons)	Yield (kg/ ha)
2015-16 (base year)	26.09	25.25	968
2016-17	26.22	31.27	1225
2017-18	27.57	31.31	1288
2018-19	28.50	31.52	1335
2019-20	29.41	33.22	1379
2020-21	30.30	35.95	1423
<b>2021-22</b>	<b>31.20</b>	<b>38.5</b>	<b>1500</b>

Source: Department of Agriculture and Statistics, Govt. of India

Due to its diversified climatic and geographic locations, India produces a wide variety of oilseeds compared to other countries. In order to meet the demand and supply gap in edible oils in the country, we had been continuously depending on import ever since the eighties, except during 1990 season, wherein we could just reach self sufficiency in edible oils, thanks to the result of Yellow Revolution initiated by the then Union Government to increase oilseed production in the country. Since then, oilseed production in the country had been more or less steady for the next ten years. Consequent to the extensive scientific intervention in the sector, annual oilseed output has shown increasing trend for the last 10 years. However, demand of edible oil growth surpasses the increase in oilseeds, resulting in import of more than 50% of our edible oil requirement.

There are two major sources of Oilseeds i.e. Primary and Secondary. Primary sources are made combining the edible group [(Groundnut, Rapeseed (Toria, Mustard and Sarson), Soybean, Sunflower, Sesame, Safflower and Niger)] and non-edible group (Castor and Linseed). Similarly, secondary sources have been established combining edible group (Seasonal crops : cottonseed, watermelon), Plantation crops : (coconut, oil palm), tree borne oilseeds: (sal seed, mahua, mango-kernel, cheura / phulwara, kokum, dhupa, [Simarouba]) and non edible group, viz; Seasonal crops : (mesta seed, tobacco seed), Plantation crops : (rubber – seed), other Tree Borne Oilseeds: (neem, karanja, pilu or khakan, palash, nahor, undi, pisa, wild-apricot, rattan-jyot, maroti, joboba, etc).

The nine types of oilseeds mentioned in the above para as primary sources, are also called the major oilseeds and are cultivated seeds. Other oilseeds from the secondary sources are called the minor oilseeds (as per Union Ministry of Agriculture and Farmer’s Welfare).

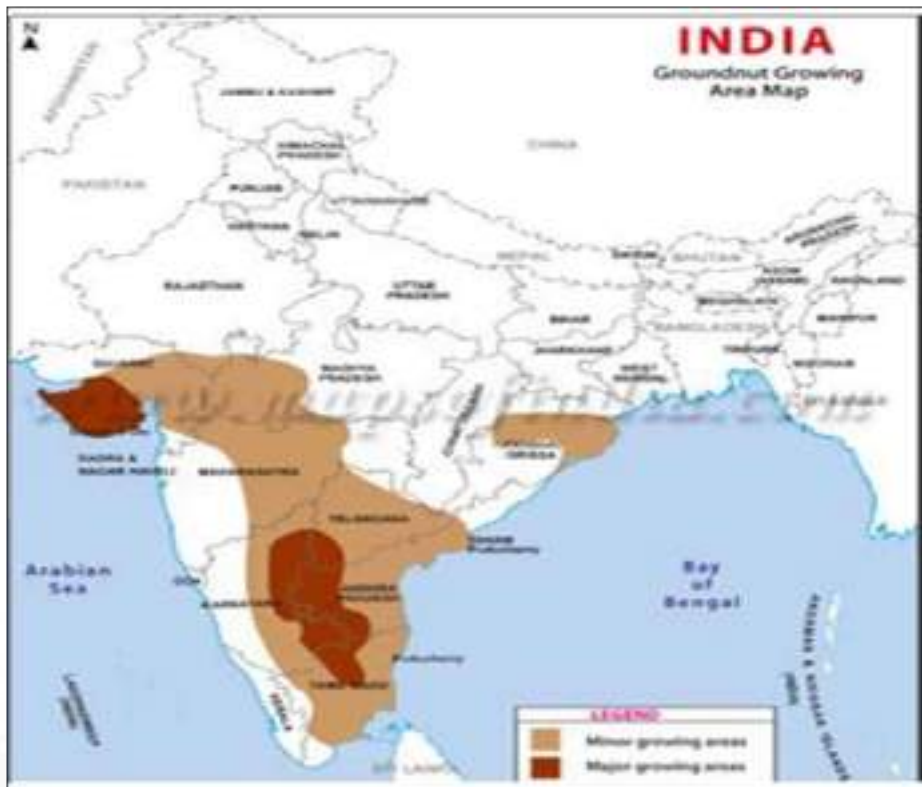
Figure-1



Figure-2



Figure -3



Figures 1, 2 and 3 show the diagrammatic representation of growing regions of rapeseed/mustard, ground nut and coconut in the country.

Almost 72% of the total oilseeds area is confined to rainfed farming cultivated mostly by marginal and small farmers. Lack of appropriate technologies, cultivation under input-starved conditions, combating the biotic and abiotic stresses are some of the major causes for poor productivity of Oilseeds.

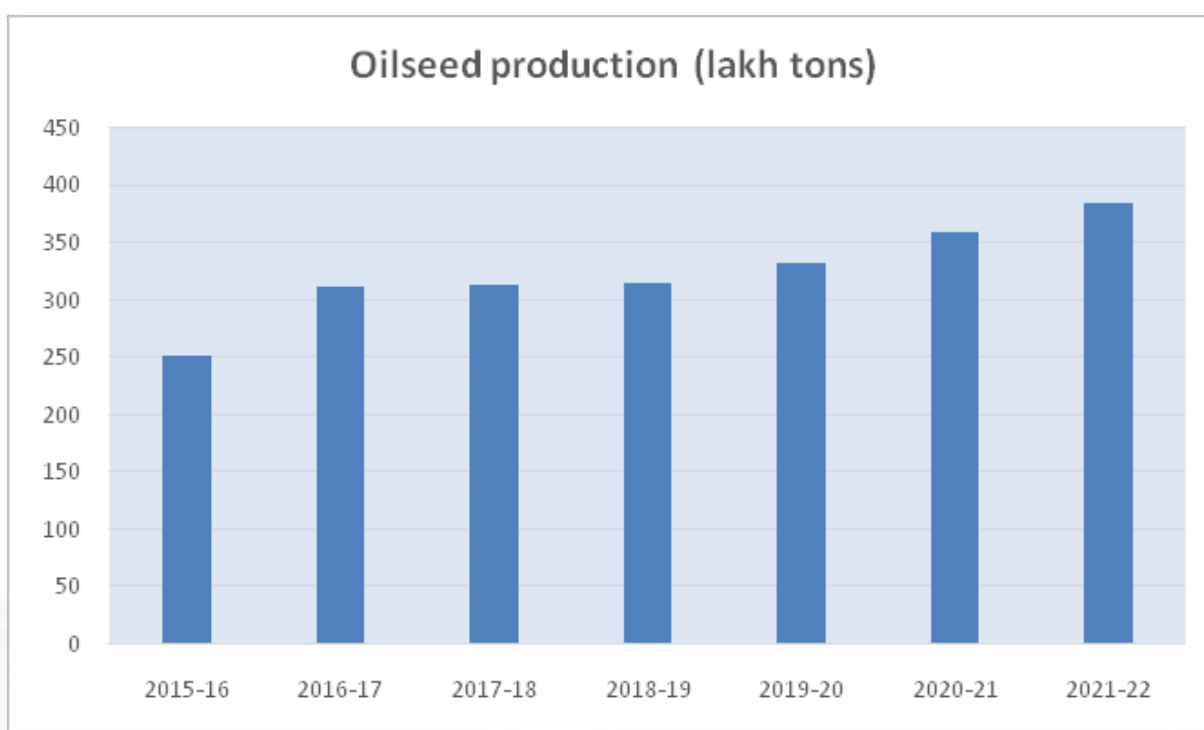
Oilseeds account for 13% of the Gross Cropped Area, 3% of the Gross National Product and 10% value of all agricultural commodities This sector has recorded annual growth rate of area, production and yield @ 2.44%, 5.47% and 2.96% respectively during last decade (1999-2009).

### Interventions to modernize agricultural practices:

Technology Mission on Oilseeds (which later became Technology Mission on Oilseeds and Pulses -TMOP) was setup in 1986, which gave a thrust to Government's efforts for augmenting the production of oilseeds. This was launched to increase the production of Edible oilseeds in the country to meet domestic demand of edible oils and had resulted in Yellow Revolution as a result of which we could attain near self-sufficiency in edible oils during 1990 period.

As a result of concerted efforts by the TMOP, the production of Oilseeds increased from 108.3 lakh tons in 1985-86 to about 360 lakh tons in 2020-21 and reportedly upto 385 lakh tons in 2021-22 based on 4th Advance estimation by Department of Agriculture and Statistics (Figure-4). This brought not only increase in area but also improvement in productivity from 570 kg/ha (1985-86) to 1284 kg/ha, 1224 kg/ha and 1254 kg/ha during 2017-18, 2019-20 & 2020-21, respectively, as per published data.

**Figure-4**



Oilseed production in India from 2015-16 to 2021-22

(Based on Advance Estimates declared by Department of Agriculture and Statistics)

National Mission on Oilseeds & Oil Palm (NMOOP) was launched in 2014-15 and continued upto 2017-18. The stated objectives of this mission are as under.

- Increase in production and productivity of vegetable oils sourced from oilseeds and Oil palm. It aims to augment the availability of vegetable oils and to reduce the import of edible oils by increasing the production and productivity of oilseeds from an average production of 29.79 million tons and productivity of 1122 kg/ha during 12th plan period to 36.10 million tons and 1290 kg/ha, respectively by end of 2019-20.
- Effort will be made to achieve additional area of 1.05 lakh hectare under oil palm cultivation during 2017-18 to 2019-20. With additional area of 1.05 lakh ha under Oil Palm during next three years i.e. up to March, 2020, total area of about 4.20 lakh ha, will be achieved.
- An area of 7480 ha will be covered under plantation of 09 TBOs namely Olive, Mahua, Kokum, Wild Apricot, Neem, Jojoba, Karanja, Simaroba and Tung during next 03 years i.e. upto March, 2020.

From 2018-19 onwards, the NMOOP is being implemented under **National Food Security Mission (NFSM)**. NFSM-Oilseeds & Oil Palm now comprises of the sub-components: NFSM- Oilseeds, NFSM-Oil Palm and NFSM-Tree Born Oilseeds (TBOs).

The revised NFSM envisages a multi-pronged strategy towards meeting its objective of attaining self-sufficiency in oilseed production in the country. This includes:

- Increasing Seed Replacement Ratio (SRR) with focus on varietal replacement.
- Productivity improvement by adoption of proven and climatic resilient technologies like water saving devices (sprinklers/rain gun), zero tillage, inter-cropping, relay cropping, strategic application of micronutrient and soil ameliorants.
- Area expansion through diversification of low yielding food grains.
- Capacity building.
- Supporting cluster demonstrations for the adoption of good agricultural practices.
- Creation of 36 oilseed hubs with a focus on regional approach for larger availability of quality seeds.
- Post-harvest management at farm and village level.
- Formation of Farmer Producer Organizations.



**Table - 2**  
**Estimated domestic production of oilseeds during 2015-16 to 2021-22\***

Oilseed	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Rapeseed/Mustard	67.97	79.17	83.22	92.56	91.24	102.1	117.54
Soyabean	85.70	131.59	109.81	132.68	112.26	126.1	138.28
Groundnut	67.33	74.62	91.79	67.27	99.52	102.44	100.87
Sunflower	2.96	2.51	2.11	2.16	2.13	2.28	2.55
Sesame	8.50	7.47	7.51	6.89	6.58	8.17	8.57
Niger seed	0.74	0.85	0.74	0.45	0.41	0.42	0.36
Safflower seed	0.53	0.94	0.47	0.25	0.44	0.36	0.44
Castor	17.52	13.76	15.68	11.97	18.42	16.47	15.06
Linseed	1.25	1.84	1.75	0.99	1.21	1.11	1.30
<b>Sub Total</b>	<b>252.50</b>	<b>312.76</b>	<b>313.08</b>	<b>315.22</b>	<b>332.19</b>	<b>359.45</b>	<b>384.97</b>

\*Based on Advance Estimates declared by Department of Agriculture and Statistics, Govt. of India.

The estimated production of major oilseeds cultivated in India during the period from 2015-16 to 2021-22 are shown in Table-2 (as per Department of Agriculture and Statistics, Govt. of India). During the oil year 2021-22, based on 3rd Advance Estimates (declared by Ministry of Agriculture on 19.05.2022), among the nine major oilseed crops cultivated in India, the highest contribution to total production of oilseeds is of soybean (35.9%) followed by Rapeseed-Mustard (30.5%) and groundnut (26.2%). These 3 oilseeds make about 92.6% of the total major oilseed production of about 385 lakh tons in the country during the oil-year 2021-22. As shown in **Table -3**, out of this, Kharif oilseed crops contribute to 247 lakh tons (64.2%) of total production and the remaining of 138 lakh tons (35.8%) comes from Rabi crops.

**Table - 3**  
**Khariff, Rabi and Total Productions of Major Oilseeds**  
(From 2018-19 to 2021-22)\*

YEAR	2018-19			2019-20			2020-21			2021-22		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
Oil production (lakh tons)												
Rapeseed/Mustard	0	87.82	87.82	0	91.24	91.24	0	102.1	102.1	117.54	117.54	117.54
Soyabean	137.43	0	137.43	112.26	0	112.26	126.1	0	126.1	0	138.28	138.28
Groundnut	51.53	13.49	65.02	83.89	15.63	99.52	85.28	17.16	102.44	17.20	100.87	100.87
Sunflower	0.90	1.10	2.00	0.92	1.21	2.13	0.78	1.51	2.28	1.43	2.55	2.55
Sesame	7.46	0	7.46	6.58	0	6.58	8.17	0	8.17	0	8.57	8.57
Niger seed	0.63	0	0.63	0.41	0	0.41	0.42	0	0.42	0	0.36	0.36
Safflower seed	0	0.22	0.22	0	0.44	0.44	0	0.36	0.36	0.44	0.44	0.44
Castor	11.98	0	11.98	18.42	0	18.42	16.47	0	16.47	0	15.06	15.06
Linseed	0	1.65	1.65	0	1.21	1.21	0	1.11	1.11	1.30	1.30	1.30
Sub Total	209.93	104.28	314.21	222.47	109.72	332.19	237.22	122.24	359.45	137.9	384.97	384.97

\*Based on Advance Estimates declared by Department of Agriculture and Statistics, Govt. of India.

NFSM also contemplates special Funding Pattern for the projects as:

- The cost sharing pattern between Central and State Governments, is in the ratio of 60:40 for general category of States and 90:10 for North Eastern and Himalayan States.
- For few interventions, like purchase of breeder seeds by both State and Central seed producing agencies, supply of seed mini-kits to the farmers, 100% funding is provided by Government of India.

**Table 4.**

**Productivity Potential (kg/ha) of improved technology of oilseeds.**

Oilseed	Improved Technology Yield (kg/ha) (IT)*	National Average Yield (kg/ha) (NAY)**	Increase in IT Crop NAY (%) over
Groundnut	2264	1439	57
Soybean	1603	1182	36
Rapeseed/Mustard	1692	1181	43
Sunflower	1742	700	149
Sesame	536	441	21.5
Safflower	1061	567	87.1
Niger	406	313	29.7
Castor	2032	1647	23.4
Linseed	1090	484	125.2
<b>Mean</b>	<b>1541</b>	<b>1019</b>	<b>51.3</b>

\* IT - Improved Technologies \*\* National Average Yield

### **Yield gap analysis:**

There exists a tremendous potential for enhancing the yield of nine major oilseed crops by adopting the modern technologies already available. This contention is based on the results of 23,118 frontline demonstrations (FLDs) (2010-2015) conducted on nine oilseeds crops under real farm situations in different agro-ecological conditions of India over a period of five years. The productivity (yield) gap between improved technology and farmers' practices ranged from 21 % in sesame to 149 % in sunflower (Table 4).

Bridging yield gap across oilseeds can increase oilseeds production significantly that would concomitantly reduce the dependence on imports of vegetable oil besides realising higher profitability to oilseed farmers.

### **Export potential**

As mentioned earlier, oilseeds are cultivated with the primary intention for producing vegetable oils. However, some oilseeds have high demand overseas. So, it becomes a source of great profit for the producers and good foreign exchange for the country. India's export of oilseeds and products dates back to many decades. Groundnuts, Sesame seeds, Safflower seeds, Sunflower seeds, Niger seeds, Mustard seeds, found their way from India to international market since many years. Presently, India is the largest exporter of Sesame seeds and Groundnuts in world markets. While Sesame seeds constitute about 31% of the total oilseed exports, Groundnuts constitute about 61% of the total oilseeds exports from India.

Indian Oilseeds and Produce Export Promotion Council (IOPEPC) is the central agency engaged in the development and promotion of exports of oilseeds and oils since past six decades, as mandated by the Ministry of Commerce and Industry, Government of India.

Responding to the concerns of European Union regarding quality of sesame seed imported from India, IOPEPC has been assigned the responsibility of establishing specific procedure for sesame seed export.

## **Conclusion**

As stated above, the oilseed economy is very crucial for India. During the last year, viz; 2020-21, India has imported about 135 lakh tons out of its estimated total consumption of 246 lakh tons of edible oils, which is about 54.7% of total consumption. This is a matter of serious concern despite the achievements attained in the productivity and out put of oilseeds in the country. We need to use modified seeds and adopt modern agricultural practices to enhance our domestic production of oilseeds in a war-foot. The journey is tough; but no looking back.

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# TOWARDS SELF-SUFFICIENCY IN VEGOIL SECTOR – POLICY PRESCRIPTION

G. CHANDRASHEKHAR



## The Context:

The Indian oilseeds and vegetable oil sector has a strange background that defies conventional logic. When a commodity is in acute short supply, the price of that commodity should rise and producers must benefit; but Indian oilseeds growers are an ironic exception.

Despite shortages, oilseed growers who are the primary producers of the raw material are often in distress. Oilseed cultivation is characterized by stagnant area, low yields, unsteady output, volatile prices (that are, more often than not, below the designated minimum support price) and weak procurement. There is lack of motivation among growers and no incentive to improve agronomy.

This is not an overnight phenomenon. This sorry state of affairs has developed over the last 25 years. But today, the country cannot afford to continue with a lackadaisical business-as-usual approach to the oilseeds sector because we spend enormous amounts of foreign exchange to import this essential food commodity of mass consumption. The Indian oilseeds sector deserves 'creative disruption'.

## Large-scale Imports Discourage Domestic Growers:

While imports have indeed been inevitable, it is important to recognize that liberal, free-market import policy for vegetable oils during the last 25 years has failed to protect domestic

growers. Our import dependence has gradually worsened because of policies skewed in favour of consumers and industry instead of farmers. As a result, as much as 70 percent of domestic consumption requirement is imported. It costs the economy a whopping \$ 11-13 Billion (well over Rs 85,000 crore) to import about 14 million tons of various oils to meet the growing domestic demand.

Without doubt, vegoil imports have helped advance consumer interest by allowing access to cooking oils at affordable rates; but we cannot overlook the fact that import policy as practiced by the government has failed to protect the domestic growers' interests. We need policies that would finely balance and advance the interests of growers and consumers both.

At the same time, we must recognize future risks: land constraints, water stress and climate change are sure to hurt Indian agriculture in general and oilseeds cultivation in particular. That makes comprehensive policy action inevitable.

The fact of the matter is that speculation-driven excessive import of low priced oils with no regulatory oversight continues to hurt domestic primary producers. No wonder, our quest for self-sufficiency or self-reliance (what the government now calls Atmanirbhar Bharat) has gone for a toss.

In this short paper the author seeks to comprehensively address the issue of reaching

self-sufficiency or substantial self-reliance in vegetable oils by judiciously balancing growers' and consumers' interests.

### **Boost Domestic Oilseed Production:**

To start with, we need to boost domestic production of oilseeds which are raw material for the processing industry. The strategy must cover the following:

- (a) Enforce area expansion through crop rotation and incentives in grain mono-cropping States such as Punjab, Haryana and Uttar Pradesh;
- (b) Adopt multiple technologies including Infotech, Agbiotech, Satellite tech, Nuclearagritech, Nanotech etc. to boost oilseeds production and productivity;
- (c) Work towards a breakthrough in seed technology in major oilseeds like soybean (tech in cotton provides a successful example);
- (d) Implement a robust procurement system. When oilseed prices fall below MSP, procurement must kick-in to support prices;
- (e) Tap the huge potential of non-conventional oil sources such as ricebran, tree-borne oilseeds and similar. We have been talking about the vast potential of tree-borne oilseeds for three decades, but not much has changed. Forest produce are a State subject; so, engagement with States is critical.
- (f) Invest in improving crushing / extraction efficiency.

Each one of the above is perfectly doable. The positive effects of the above will be visible over a period of time. At the same time, we need to do something that will deliver an immediate impact; we need some 'quick wins'. Yes, it is

possible to achieve some quick wins without compromising stakeholder interest.

For Quick Wins:

Given the wide supply gap, in the short-term, vegoil import is inevitable. But we can surely take measures to mitigate the negative impact of large-scale import. It is critical to prevent speculation-driven, excessive and unrestrained import of vegoils that depress domestic oilseed prices and hurt growers' interest.

- (1) Necessary to Regulate and Monitor Imports: India's vegetable oil imports need strict regulation and monitoring. Considering an annual ceiling on import volume may not be out of place. Monitoring of import is critical. Quarterly reviews of import performance may be undertaken. Tariffs / duties have to be dynamic.

Today, the government has no clue about the quantity of oil contracted for, type of oil, price, arrival period and so on. In the absence of this vital information, New Delhi's response to this trade is often kneejerk. A system of 'Import Contract Registration' will remove the opacity, make the business transparent and facilitate informed decision making for policymakers.

This simple administrative decision (with no financial liability for the government) alone will exert a positive impact on the oilseed market sentiment.

- (2) Importantly, the credit period for payment (to overseas suppliers) against import should be cut down to 45 days maximum. Currently importers enjoy 90-120-150 days' credit which encourages overtrading and speculation. Because of the long credit period, many Indian importers indulge in over-trading. Some importers are already in a serious 'import debt trap' because of rampant overtrading. Bank loans to

importers can turn into NPA anytime. Reduced credit period will automatically slow the pace of import and make the importer more responsible and accountable.

### What will the ceiling on import achieve?

A quantitative ceiling on import will lift domestic oilseed prices almost immediately. Higher prices (above MSP) will surely motivate growers and help expand domestic production. For growers, there is no incentive greater than price incentive. Higher domestic oilseed production will boost domestic processing capacity utilization for crushing and solvent extraction, and generate jobs and incomes.

#### (3) Cooking oil under PDS:

While growers benefit through a quantitative ceiling on vegoil import, vulnerable sections of the consumers must be supported with supply of edible oil under PDS / NFSA at subsidised and affordable rates. This country has a recorded history of supplying edible oil through PDS until the year 2002. It must be revived. PDS and private trade supplies can co-exist; they are not in conflict and both help advance consumer interest.

### More Suggestions:

- Oilseed import: We need to allow import of oilseeds in partial replacement of vegoils to gain multiple benefits. While vegoils are finished or semi-finished products with little value addition possibility, oilseeds are primary raw material. Import of oilseeds in lieu of oils will boost utilization of domestic idle processing capacity; will create more jobs and incomes; will result in augmented edible oil availability; and importantly, make available more cake / meal for the domestic livestock sector or for export.
- Modernisation Fund: The government must consider creating 'Oilseeds Processing

Industry Modernisation Fund'. Many of the numerous oilseed crushing units (about 15,000) and solvent extraction plants (over 800) are intrinsically inefficient in terms of scale, equipment, technology and productivity. They need to be upgraded. When modernized, the industry has better chance to capture greater value. Also, it will create potential to attract Foreign Direct Investment (FDI).

- Backward linkage: There is mistaken belief in a section of the Indian refining industry that a liberal policy of vegoil import is its inalienable birthright. This section of the industry has done nothing to advance domestic growers' interests. A policy that mandates large domestic processing industries (oil mills, refining units, solvent extraction plants) to establish backward linkages to produce oilseeds is perfectly justified and the need of the hour. Importers have to mandatorily contribute to import substitution too. Implementation details can be discussed.

The agri-market reforms encourage 'contract farming'. Large processors must establish backward linkages, work with FPOs and help lift domestic oilseed production. A fake narrative of 'Make in India' by some entrenched interests in the industry to continue to promote large-scale vegoil import must give way to 'Genuine Make in India' which is when we produce and process more oilseeds domestically.

Much bet is being laid on the prospect of oil palm cultivation; but history tells us that nothing remarkable has happened in oil palm in the last 30 years. While the new oil palm initiative is a welcome step, let us not fool ourselves by believing that oil palm alone will solve our supply problems. We need a comprehensive review of oil palm promotion policy for sustained and sustainable growth.

Strong promotional support to domestic oilseeds such as soybean, rapeseed-mustard and groundnut is the need of the hour, specifically through technological intervention. Sunflowerseed and Sesameseed are high-oil content oilseeds that deserve to be promoted. Our research institutions have a duty to come up with appropriate seed varieties.

The country's oilseeds sector deserves policy support, investment support and research support.

Engagement with Indonesia: India and Indonesia have a long trading relationship. From Indonesia, we import palm oil, timber and coal to name a few key commodities.

India's balance of trade with Indonesia is adverse. The world's largest palm oil producer imposes export duty on palm oil. I believe, a Government-to-Government dialogue with Indonesia can pressure the exporting country to review its export duty insofar as export to India is concerned. We may even consider G-to-G import of palm oil from Indonesia through our State agencies. Counter-trade with Indonesia must be explored.

Finally, policymakers must demonstrate strong 'political will' to creatively disrupt the debilitating status quo and design supportive policies to move towards self-sufficiency in oilseeds and vegoils in a time-bound manner.

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**DR. RICHA PRITWANI<sup>1</sup>**

## **EVOLVING REGULATORY LANDSCAPE OF EDIBLE OILS IN INDIA – A BRIEF OVERVIEW**



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### **Introduction**

#### **Edible Fats & Oil Scenario in India**

Oilseeds and edible oils are two of the most sensitive essential commodities. India is the fourth largest producer of oilseeds in the world, with oilseed sector occupying an important position in the country's economy. However, India is also one of the largest oil importing country in the world. This sector occupies an important position in the agricultural economy, accounting for the estimated production of 36.56 million tons of nine cultivated oilseeds during the year 2020-21 (November-October) as per 3rd Advance Estimates released by the Ministry of Agriculture on 25.05.2021. The domestic demand for vegetable oils and fats has been rising rapidly, at the rate of 6 per cent per annum, but our domestic output has been increasing at just about 2 per cent per annum. In India, the average yield of most oilseeds is extremely low as compared to other countries of the world. The cultivation of oilseeds in India is in high risk regions where there are uncertain returns on investments.

#### **Types of Oils commonly used in India**

India is fortunate to have a wide range of agro climatic zones which has helped in ensuring that it also has access to a wide range of locally grown oilseed crops. India accounts for about 15-20 per cent of global oilseeds area, 6-7 per cent of vegetable oils production, and 9-10 per cent of the total edible oils consumption.

The diverse agro-ecological conditions in the country are favourable for growing nine annual oilseed crops, which include seven edible oilseeds (groundnut, rapeseed & mustard, soyabean, sunflower, sesame, safflower and niger) and two non-edible oilseeds (castor and linseed) and several perennial oil-bearing tree crops. Soyabean and sunflower have also assumed importance in recent years. In addition, oilseeds of tree and forest origin, which grow mostly in tribal inhabited areas contribute significantly as minor source of oil, including coconut and oil palm. Coconut is most important amongst the plantation crops. Efforts are being made to grow oil palm in Andhra Pradesh, Karnataka, Tamil Nadu and North-Eastern parts of the country in addition to Kerala and Andaman & Nicobar Islands. Among the non-conventional oils, rice bran oil and cottonseed oil are the most important, along with small quantities from tobacco seed and corn. In addition, oilseeds



of tree and forest origin, which grow mostly in tribal inhabited areas, are also a significant source of oils. Around 365.65 lakh tons of major cultivated oilseeds were produced in last year (2020-21). Net availability of edible oils from Domestic and Import Sources was 113.09 and 74.40 lakh Tons respectively.

### **Consumption Pattern of Edible Oils in India**

India is a vast country and inhabitants of several of its regions have developed specific preference for certain oils largely depending upon the oils available in the region. For example, people in the South and West prefer groundnut oil while those in the East and North use mustard i.e. rapeseed oil. Likewise several pockets in the South have a preference for coconut and sesame oil. Inhabitants of northern plain are basically consumers of fats and therefore prefer Vanaspati, a term used to denote a fully or partially hydrogenated edible oil mixture of oils like soyabean, sunflower, ricebran and cottonseed oils. In India, Vanaspati is usually made from palm oil. Many new oils from oilseeds of tree and forest origin have found their way to the edible pool largely through Vanaspati route. Of late, things have changed. Through modern technological means such as physical refining, bleaching and de-odorization, all oils have been rendered practically colourless, odourless and tasteless and therefore, have become easily interchangeable in the kitchen. Oils such as soyabean oil, cottonseed oil, sunflower oil, rice bran oil, palm oil and its liquid fraction- palmolein which were earlier not known have now entered the kitchen. The share of raw oil, refined oil and Vanaspati in the total edible oil market is estimated roughly at 35%, 60% and 5% respectively. About 56 % of domestic demand of edible oils is met through imports out of which palm oil/palmolein constitutes about 54%. The consumption of refined palmolein (RBD palmolein) as well as its blending with other oils has increased substantially over the years and is used extensively in hotels, restaurants and in preparation of wide varieties of food products. Per Capita consumption of oils in India is around 51.4 Gallons per year. In respect of volume, Palm, Soya bean and Mustard oils are the three largest oils consumed in India

### **Import of Edible Oils in India**

Edible oils are indispensable in the Indian kitchen. But it might be surprising to many that India imports most of the oil it consumes, unlike most other agricultural products which are produced locally. Even after having a diverse agro-climatic conditions, abundant land and large sections of population depending on agriculture, India imports edible oils. According to the latest data, each Indian consumed 19.5 kg of edible oil every year on an average during 2015-16, up from 15.8 kg in 2012-13. This amounts to an aggregate demand of around 26 million tons of edible oils per year.

*(Source: Dept. of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution)*

### **Oils & Fats: Regulatory Framework in India**

FSSAI has been established under FSS Act, 2006 which consolidates various acts and orders that have hitherto handled food related issues in various Ministries and Departments such as Prevention of Food Adulteration Act, 1954, Fruit Products Order, 1955, Meat Food Products Order, 1973, Vegetable Oil Products (Control) Order, 1947, Edible Oils Packaging (Regulation) Order 1988, Milk and Milk Products Order, 1992 etc. 9 laws were repealed after commencement of FSS Act, 2006. FSSAI is responsible for protecting and promoting public health through the regulations and supervision of food safety. This marked a shift from a multi-level to a single line of control with focus on self-

compliance rather than a pure regulatory regime.

FSSAI governs quality and safety of products available to consumers in Indian markets. Standards are laid down for majority of Oils & Fats (Sub-regulation 2.2 of the FSS (Food Products Standards and Food Additives) Regulations, 2011 and amendments made thereunder) which are as given below –

- 2.2- Fats, Oils and Fat Emulsions

- 2.2.1 Oils - 31 standards including Refined oils and Multi Source Edible Oil
- 2.2.2 Interesterified Vegetable Fat/Oil
- 2.2.3 Partially Hydrogenated Soyabean Oil - including partially hydrogenated and winterised Soyabean oil
- 2.2.4 Edible Fats – Various standards such as beef fat, mutton fat, goat fat, lard, cocoa butter, refined salseed fat, kokum fat, mango kernel fat, dhupa fat, phulwara fat, peanut butter, shea butter, borneo tallow/ illipe butter defined.
- 2.2.5 Margarine and Fat Spreads - table margarine, bakery and industrial margarine, fat spread
- 2.2.6 Hydrogenated Vegetable Oils – vanaspati, bakery shortening

Description and specific quality requirements have been stated for various parameters like Butyrorefractometer reading, Refractive Index, Saponification value, Iodine value, Polanski Value, Unsaponifiable matter Acid, Argemone oil, Fatty acid profile, Test for Hydrocyanic Acid and Peroxide Value wherever applicable for various oils.

The Dietary Guidelines for Indians, published by NIN, recommends that cooking oils be can be blended in different combinations to maintain a healthy ratio between polyunsaturated and saturated fats. Using more than one source of fat or oil has the advantage of providing various nutrients in the diet and these type of oils provide the necessary nutrients to the body and combinations of these nutrients are effective for a fit and healthy lifestyle. Blending of oils combines the potency of two/more edible oils; it offers a balance of fatty acids and antioxidants, and this approach is used to enhance the oxidative and thermal stability of oils. Research has shown benefits of consuming different blend of oils on health. A blend of rice bran oil and safflower oil (70:30) with added antioxidants reportedly improved several lipid parameters and certain inflammatory markers (Upadya et al., 2015). Study by Gillingham et al., 2011 has indicated that canola, or in blend with flaxseed oil, effectively reduced serum TC and LDL-c. Moreover, the canola–flaxseed oil blend further reduced plasma E-selectin by targeting the inflammation and atherogenic pathways. Therefore, replacement of commonly consumed fats with canola–flaxseed oil or similar blends is a viable option to achieve dietary recommendations, as well as target the CVD risk factors.

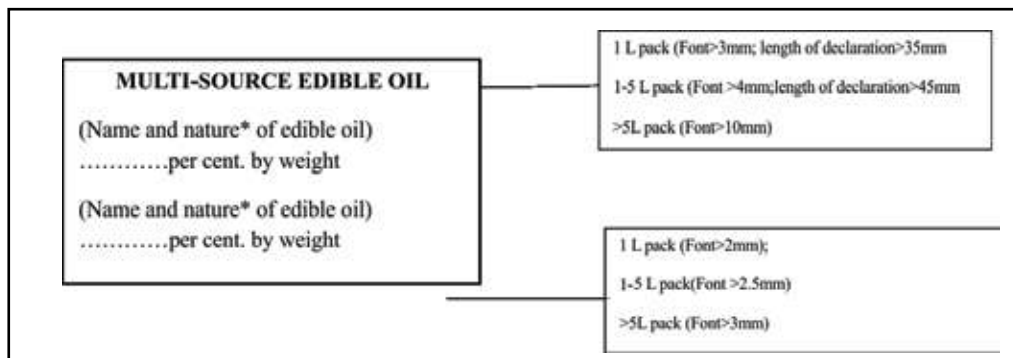
Knowing these benefits of blended oils, apart from single oils, FSSAI has also allowed FBO's to produce Blended Oils (now called as Multi Sourced Edible Oil - MSEO) and laid down the requirements for them. It means an admixture of any two edible vegetable oils where the proportion by weight of any edible vegetable oil used in the admixture is not less than 20 per cent. The individual oils in the blend shall conform to the respective standards prescribed by these regulations. MSEO shall not contain more than 33% of SFA. MSEO may have an ideal ratio of  $\omega$ -3 &  $\omega$ -6 to be in the range

of 1:5 to 1:10. Third oil namely Chia oil and/or Flaxseed/Linseed Oil, upto 5 % of the total oil, may be added if the MSEO is claimed to have an ideal ratio of  $\omega$ -3:  $\omega$ -6. The blend shall be clear, free from rancidity, suspended or insoluble matter or any other foreign matter, separated water, added colouring matter, flavouring substances, mineral oil, or any other animal and non-edible oils, or fats, argemone oils, hydrocyanic acid, castor oil and tricresyl phosphate.

### Specific requirements on manner of labelling for MSEO

FSSAI came up with an amendment in labelling regulations of vegetable oils on December 24, 2018. Post then, FSSAI revised Nomenclature of Blended Edible Vegetable Oil to Multi Source Edible Oil. On June 29, 2021, the FSSAI published a new directive changing the nomenclature “Blended Edible Vegetable Oil” or “Multi Source Edible Vegetable Oil” now to simply “Multi Source Edible Oil” (Figure 1).

Additionally, as per new FSS (Labelling and Display) Regulations, 2020, there are mandatory labelling provisions laid down for Package containing an admixture of edible oils, which clearly differentiate single oil and Multi source edible oil. Constituent oils (with%) to be mentioned immediately below its brand name/tradename on Front-of-pack, followed by declaration of “**MULTI-SOURCE EDIBLE OIL**” in bold capital letters.



(\*i.e. in raw or refined form)

There shall also be the following declaration in bold capital letters along with the name of product on front of pack:-

**NOT TO BE SOLD LOOSE**

Figure 1 : Chronological events for FSSAI directives for Multi Source Edible Oils is given below



## Basic Guidelines for labelling of Vegetable Oils and fats

As per new FSS (Labelling and Display) Regulations, 2020, other than all provisions laid for all pre-packaged foods following additional requirements needs to be followed for oils and fats:-

1. Specific name of edible oil/type of vegetable fat/source of fat, pork fat, lard and beef fat or extract thereof in the list of ingredients on the label, as the case may be.
2. Every container of refined vegetable oil shall bear the declaration, namely, "Refined (name of the Oil) Oil".
3. The package, label or the advertisement of edible refined vegetable oils and fats shall not use any exaggerated expressions like "Super-Refined", "Extra-Refined", "Micro-Refined", "Double refined," , Ultra-Refined".
4. Every package of Oils and fats shall also need to declare the quantity of trans fat content, saturated fat, monounsaturated fatty, polyunsaturated fatty acid, omega-3 fatty acid and omega-6 fatty acid content.
5. Vanaspati made from more than 30 percent of rice bran oil shall mention -
  - This package of vanaspati is made from more than 30 per cent Rice bran oil by weight'.
  - If physically refined rice bran oil is used, the label shall declare in the ingredient list "Physically Refined Rice Bran Oil"

### Specific Claims requirements for Oils

FSS (Advertising and Claims) 1st Amendment Regulations, 2020 listed various "Nutrient Function" claims for Edible Vegetable Oils that FBOs can use on their labels or advertisements while advertising their products. FBOs may choose to use same or similar terms in the claim statements as provided in this Schedule while ensuring no change in the intent and meaning of the claim. FSSAI have prescribed nutritional claims for fifteen edible oils used in the country including coconut, cottonseed, corn, groundnut, linseed/flaxseed, mustard, mustard/rapeseed (low erucic), olive, safflower, palm

kernel, rice bran, palmolein, sesame, soybean and sunflower oil. Also, some of the claim statements for reduction of disease risk claims have also been specified for various Nutrient/Food-Health Relationship provided prescribed conditions of claims are met.

FBOs may make nutrient-function claims as specified for individual oils provided that the claims are restricted to the major component of the blend -

- If a blend has 70% of Oil A & –30% of oil B (but not less than 20%), nutrition-function claims specified only for Oil A can be made;
- If a blend has 51% of Oil A and 49% of Oil B, nutrition-function claim specified only for Oil A can be made; and
- If a blend has 70% Oil A, 25% Oil B and 5% Oil C (being linseed or chia seed oils), nutrition-function claim as allowed for Oil A and also claim regarding omega-3 to omega-6 ratio can be made.

Further, in case of MSEO whose component oils are of equal proportion (i.e., 50% each), only those specified nutrient-function claims that are common to both the oils can be made. However, in case the component oils of MSEO have conflicting nutrient-function claims, no such claims can be made.

### **Fortification requirements for Oils**

The main edible oils produced domestically in India include rapeseed oil, soy oil, cotton seed and groundnut oil. Edible oils are an important component of food in Indian households with its penetration in 99% households. Palm oil is the single largest consumed oil (38%) closely followed by soybean oil (22%). Thus, it is possible to improve people's access to fat-soluble vitamins through fortification of edible oils. FSSAI allowed fortification of edible oils, being a staple in Indian households which can help in improving nutritional status of Indians and target micronutrient deficiencies in all sections of the population. FBOs can fortify vegetable oils also with Vitamin A (6 µg RE - 9.9 µg RE Retinyl acetate, Retinyl palmitate and Retinyl propionate per gm of Oil) or Vitamin D (0.11 Cholecalciferol, Ergocalciferol µg- 0.16 per gm of Oil) singly or combination. Fortification of cooking oil with vitamins A and D is feasible technically, and economically and is a successful model. Fortification of oil does not alter the taste, flavour or the colour of the oil. Since vitamin A and D are fat-soluble vitamins, fortification of edible oils and fats with vitamin A and D is a good strategy to address micronutrient malnutrition and fortified oil is known to provide 25%-30% of the recommended dietary allowances for vitamins A&D.

**Every package of fortified food shall carry -**

- the words - "fortified with ..... (name of the fortificant)" and;
- the logo -



It may also carry a tag line -“Sampoorna Poshan Swasth Jeevan” under the logo.

## Prohibitions and Restrictions on oils and fats

As per FSS (Prohibition and Restrictions on Sales) Regulations,

### 1. **Sub regulation 2.1 prohibits sale of certain admixtures, as under-**

- Mixture of two or more edible oils as an edible oil. This provision shall remain inoperative, where-
  - \* proportion by weight of any vegetable oil used in the admixture is not less than 20 percent by weight and;
  - \* the quality of each edible oil used in the admixture conforms to the relevant standard;
  - \* admixture of edible vegetable oils, processed or packed and sold,...in sealed packages weighing not more than 15 liters under AGMARK certification Mark compulsorily and bearing the label declaration as specified under the regulations.
- /Vanaspati to which ghee or any other substance has been added.
- Any MSEO containing Mustard Oil manufactured on or after 8th June, 2021.

### 2. **Sub-regulation 2.3.14 provide restrictions relating to conditions for sale-**

- All edible oils (except coconut oil, olive oil) imported in crude, raw or unrefined form shall be subjected to the process of refining before sale for human consumption.
- Colored and flavoured table margarine shall only be sold in a sealed package weighing not more than 500 gms, with a label declaring addition of colour and flavor as required under these regulations. The fat spread shall not be sold in loose form, shall be sold in sealed packages weighing not more than 500 gms. The word “butter” shall not be associated while labelling the product. The sealed package shall be sold or offered for sale only under AGMARK Certification mark bearing the label declaration as provided under the labelling regulations
- Food Products with edible oils and fats as an ingredient shall not contain industrial trans fatty acids more than 2% by mass of the total oils/fats present in the product, on and from 01st January, 2022. Guidance Note on elimination of trans-fatty acids is available on FSSAI’s website now.
- MSEO - shall not be sold in loose form & container shall be tamper proof; AGMARK certification mandatory for selling; shall be sold in packs weighing not more than 15 kg; shall not be sold under the common/generic name of single oil.

### 3. **Sub-regulation 2.3.15 (1) provides special provisions relating to sale of vegetable oil and fat-**

- Sale of loose edible oil is prohibited. State Government may, in the public interest, exempt any edible oil from thiprovision.
- Restriction on the use of diacetyl as flavouring substance in oils and fats. Total Polar Compounds

(TPC) in unused or fresh vegetable oil or fat shall not be more than 15%; Used vegetable oil fat having developed TPC more than 25% shall not be used.

- No colour shall be added to hydrogenated vegetable oil unless authorized by the Authority, but in no event any colour resembling the colour of ghee shall not be added. If any flavour is used, it shall be distinct from that of ghee, in accordance with a list of permissible flavours and such quantities as may be prescribed by the Food Authority. No vegetable oil shall contain any harmful colouring, flavouring or any other matter deleterious to health.
- No anti-oxidant, synergist, emulsifier or any other such substance other than those permitted by these regulations be added to any vegetable oil except with the prior sanction of the Food Authority.

## **FSSAI Guidelines for Used Cooking Oil**

Repeatedly heating cooking oil is a common practice in eateries, be it roadside food joints or restaurants. But this practice comes with a health cost. Currently, used cooking oil is either not discarded or disposed of in such a manner that it chokes drains and sewerage systems. To address this issue, FSSAI regulations for monitoring quality of used cooking oil (UCO) came into effect recently. Apart from setting quality standards, the new regulation has also addressed the way this oil is discarded. New guidelines for used cooking oil and exploring possibility of using it as feedstock for biodiesel production has been rolled out. The FSSAI issued document covered such subjects as disposal of UCO, procedures to be followed for handling and disposal of UCO by small and big FBOs, household level and guidelines provided under the Food Safety and Standards Regulations, 2011. “Annually, about 23 million tonnes of cooking oil is consumed in India. There is potential to recover and use about 3 million tonnes of this for production of bio-diesel,” FSSAI told media. This will have an estimated value of Rs 18,000 crore per year.

### **Key takeaway points for handling and discarding the UCO has been shared by FSSAI.**

- It is strictly mentioned to avoid the repeated use of cooking oil for frying, while at the household level, it should be filtered after using it once for frying and later used for curry preparation in order to make it economical.
- It is informed that UCO should be consumed in a day or two and not stored for long duration, as the rate of deterioration is high.
- UCO should be discarded when a blue-grey smoke appears, or tough foam is formed, becomes dark or murky, consistency of oil changes and oil developed Total Polar Compounds of over 25 per cent.
- All FBOs would be required to monitor the quality of oil during frying by complying with the said regulations. With regards to its disposal, the key takeaway points were to discard UCO in an environment friendly way by selling it to the authorised UCO aggregators or collection agencies and definitely not to discard in drains or sewerage systems.
- FSSAI issued detailed standard operating procedure in Jan 22, for safe handling and disposal of UCO.

## Various relevant provisions relating to UCO are:

- FSS (Licensing and Registration) Amendment Regulations, 2017 prescribes the limit of TPC to be not more than 25% beyond which vegetable oil is not suitable for use. In general, re-heating, reuse of oil and leftover oil should be avoided as far as possible.
- As per section 2.3.15 (8) of FSS (Prohibition and Restrictions on Sales) Regulations, 2011 specifies that “The Total Polar Compounds (TPC) in unused or fresh vegetable oil or fat shall not be more than 15% and used vegetable oil or fat having developed Total Polar Compounds more than 25% shall not be used”.

FSSAI order dated 30th Jan 2019 directs all FBOs whose consumption oils for frying is 50 L or more shall maintain record of usage and disposal of edible oil in prescribed format. It further directs them to dispose used cooking oil to agencies authorised by FSSAI or Commissioners of Food Safety of states / UTs w.e.f 1st June 2019.

In many countries, Total Polar Compounds (TPC) are used to measure the quality of oil. The level of TPC increases every time oil is re-heated. Some of the studies show that TPC accumulation in oil without food is slower than that in oil frying with food. Repeated use of the same oil for frying of foods leads to changes in physiochemical, nutritional and sensory properties of the edible oil. TPC are formed on repeated frying. The toxicity of these compounds is associated with several diseases such as hypertension, atherosclerosis, Alzheimer’s disease, liver diseases. Therefore, In view of this, to monitor the quality of oil and to avoid the use of degraded oil for cooking purposes, FSSAI has fixed a limit for TPC at 25 percent beyond which the vegetable oil shall not be used. Thus, as according to the regulations, the TPC has to be within a limit of 25 per cent, therefore UCO with more than 25 % is unsafe and its use is prohibited in India. Testing protocols for TPC have also been established by FSSAI. In fact, small handheld devices are now available that check TPC in the oil during frying.

FSSAI has advised State Food Safety Commissioners to focus on awareness and education programmes, surveillance and enforcement activities for the new set of regulations.

## Blending of Mustard Oil

Considering notification of government in 1990 allowing the blending of edible vegetable oil, FSSAI rolled out regulations in the regard in 2006. Blending of edible oils was first permitted by the Indian government in the 1990s. After the outbreak of dropsy (due to adulteration of mustard oil) in the late 1990s, the government pushed for blending mustard oil with other edible oils. FBOs involved in blending were regularised through the Agriculture Produce (Grading and Marking) Act (AGMARK) also. Blending mustard oil with other edible oils considered to bolster nutritional profile, taste and quality. Mustard Oil is prohibited to be used as one of the constituents of MSEO effective from 08.06.2021. In order by FSSAI to the commissioner of all states’ food safety and Union Territories, the blending of mustard oil with any other edible oil in India had been prohibited from October 1, 2020. No manufacturing of blended edible vegetable oil with mustard oil as an ingredient shall even be allowed with effect from this date.

The edible oil manufacturers or processors are those who have a license for production of the blended edible vegetable oil with mustard oil, have been directed to sell the existing stock mustard



oil/mustard seeds or other edible oil as unblended cooking oils. All such licensees have been asked for a modification of their FSSAI licenses.

### **Trans-Fats Regulation in India**

The Food Safety and Standards Authority of India (FSSAI) announced that all edible refined oils, vanaspati, bakery shortening, margarines, vegetable fat spreads and mixed fat spreads may only contain 3 per cent or less trans fats by January 2021 and 2 per cent or less trans fats by January 2022. The World Health Organisation (WHO) Population Nutrient Intake Goal recommends that trans-fat consumption should be less than one percent of total energy intake. WHO has appealed to the global food supply for the elimination of trans-fats and many countries like Canada, Denmark, the United States, and few other European countries have taken measures to provide a statutory framework for regulating the TFA intake. India, too, passed regulations in 2011 to set the TFA limit to 10 percent in oils and fats. This was further reduced to five percent in 2015. In December 2018, the FSSAI proposed reducing this limit to two percent and eliminating industrially produced TFA in the food supply by 2022, a year ahead of the global target. In August 2019, the FSSAI proposed aligning India's regulations with global best practice and notified the related regulations.

### **Unit Sale Price: a new mandate by Ministry of Consumer Affairs**

In a major policy shift pertaining to pre-packed goods, the government has done away with Schedule 2 requirements i.e. mandatory standard pack sizes that governed the 19 types of commodities which were to be packed in quantities by weight, measure or number by amending the Packaged Commodities Rules, 2011 on November 2. Now, introduced instead, mandatory unit sale pricing, enforced from April 1. Date of enforcement of these Legal Metrology (Packaged Commodities) Amendment Rules, 2021 has been substituted from the date '1st day of April, 2021' with '1st Day of October, 2022'. These provisions will enhance price transparency and help consumers make an informed choice while buying packed goods.

### **Conclusion:**

Regulatory frameworks across the globe are expected to respond to developments in both science and society, hence they always undergone changes as these developments gain speed. Indian regulatory frameworks are no different in this aspect and try to respond to concerns arising from all these spheres of Trade, Science and Society. Hence, we are witnessing many changes in the regulations governing product identity standards, blending of products, consumer information requirements. And these changes are controlled by multiple ministries and authorities. This multiplicity of authorities does create a degree of challenge for the trade, as a significant amount of resources gets deployed to manage change and continued compliance. While each of the individual changes may be warranted due to specific concerns, more coordinated effort on part the government authorities can lower the cost of compliance by avoiding multiple rounds of change.

### **References -**

1. FSS Regulations ([www.fssai.gov.in](http://www.fssai.gov.in)). Ministry of Health and Family Welfare
2. Legal Metrology (Packaged commodities) Rules (<https://consumeraffairs.nic.in>) Ministry of Consumer Affairs

3. Dept. of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution ([www.dfpd.gov.in](http://www.dfpd.gov.in))
4. Gillingham L.G., Gustafson J.A., Han S.Y., Jassal D.S., Jones P.J.H. High-oleic rapeseed (canola) and flaxseed oils modulate serum lipids and inflammatory biomarkers in hypercholesterolaemic subjects. *Br J Nutr.* 2011;105:417-427.
5. Upadya H., Devaraju C.J., Joshi S.R. Anti-inflammatory properties of blended edible oil with synergistic antioxidants. *Indian J Endocrinol Metab.* 2015;19(4):511-519.

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# Acknowledgement



IVPA Souvenir has come a long way since its inception. Not only the articles section is of great interest to one and all connected with the edible oils and fats industry but the product & services information directory has become very popular with both manufacturers and suppliers.

We wish to express our grateful thanks to all the eminent authors who have contributed well researched and thought-out articles, Hon'ble Ministers, Senior Govt officials for their motivational messages and best wishes, our executive committee, our members and the advertisers for their support in making it possible for us to publish this souvenir in commemoration of IVPA Global RoundTable on Veg Oil and Oil seed Sector.

The views expressed and theories propounded in the articles are those of the respective writers and the Association does not necessarily subscribe to the same.

# INDIAN VEGETABLE OIL PRODUCERS' ASSOCIATION (IVPA)

- IVPA was founded as “Indian Vanaspati Producers Association” in 1977 and registered as “Not for Profit Organization” and incorporated under Section 25 of the Companies Act, 1956.
- IVPA did a yeoman service as “Indian Vanaspati Producers’ Association” and now rechristened as “Indian Vegetable Oil Producers’ Association” is continuing to support the cause of the industry.
- IVPA comprises of various stake holders of edible oil and oil seeds value chain with all major manufacturers/processors/refiners of vegetable oil and fats as our members.
- IVPA’s **MISSION** is to continue to be the Credible Voice of the Indian Oils & Oil seeds Industry. IVPA advocates and provides inputs for Policies that increase Stake holders’ Value and Spur Economic Growth in the country through continued investment & innovation, ensuring sustainability of Supply Chains to deliver Safe and Healthy products for the growing Population.
- IVPA’s **VISION** is to Promote Sustainability, Economic Growth and Excellence in the Edible Oils and Oilseeds Value Chain in India.
- IVPA’s **VALUES** - Credibility, Integrity, Inclusiveness and Responsibility.
- IVPA provides a platform for its members for projecting their policies, plans and programs in the field of oilseeds and edible oils to the concerned authorities. IVPA has been taking up effectively the issues concerning the industry with various Ministry / Department for its successful resolution. IVPA keeps its members posted with the latest regulations and developments pertaining to edible oils and oilseeds.

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# Product & Services Information Directory



# Product & Services Information Directory

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Our cohesive and holistic sustainability blueprint aims to strengthen further our commitment towards exemplary standards on environment sustainability, social responsibility and corporate governance. Furthermore, we aspire to inspire the world towards sustainable living with our endeavours to develop solutions for a sustainable future through edible oils, palm oil-based biodiesel, nutraceuticals and other palm oil derivatives. Let us take the first step towards a partnership built on success.

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## Solidaridad

### Sustainable Vegetable Oil Mission

Solidaridad being a global civil society organization is pioneer in the development and promotion of many global and national sustainability standards which facilitates the development of socially responsible, ecologically sound and profitable supply chains across various global commodities.

Solidaridad Asia together with the government, leading vegetable oil industry associations and businesses in Asia and the world is promoting the “Sustainable Vegetable Oil Mission”. In India, we are closely working with the Solvent Extractors’ Association of India (SEA), the Indian Vegetable Oil Producers’ Association (IVPA) and the Soybean Processor’ Association of India (SOPA). The objective of mission is to promote the production of vegetables oils in balance with nature while ensuring the inclusivity and prosperity among the smallholder farming families and the workers. The mission focuses on sustainable both production as well as trade aspects of vegetables oil supply chain.

Under the “Sustainable Vegetable Oil Mission” the Asian Palm Oil Alliance (APOA) is set-up to facilitate development of a common, collective, coordinated and coherent position of the Asian palm oil industry stakeholders. The Joint Working Committees are formed for Sustainable Palm Oil Production and Trade between palm oil producing and consuming countries.



### IPOS FOR SUSTAINABLE OIL PALM PRODUCTION AND TRADE



The Indian Palm Oil Sustainability (IPOS) framework is developed with the support of The Solvent Extractors’ Association of India (SEA), Indian Institute of Oil Palm Research (IIOPR), SOPOPRAD and many industry stakeholders. IPOS is being promoted with the objectives to support the sustainable expansion of oil palm in India. We have incorporated the principles of regenerative agriculture in Oil Palm production systems with the objective to ensure resilience against climate change, conserving land and soil, biodiversity and improving services within farming system. IPOS initiatives appropriately contribute towards the objectives of National Mission on Edible Oil – Oil Palm (NMEO - OP) led by the Government of India.

In addition, the mutual recognition between national sustainability standards i.e. IPOS – ISPO -MSPO is facilitated and cooperation is established with the Government of Indonesia and Malaysia for enabling policies and uptake of sustainable palm oil in the key Asian markets.

### MUSTARD MISSION 2025: AIMING FOR 20 MILLION TONNE BY 2025



Rapeseed-mustard group is the major oilseed crop of India. The crop accounts for nearly one third of edible oil produced through primary sources making it country’s key edible oilseed crop. A lot of work has been done to promote its cultivation, yet its production is range-bound in the 7.0 to 8.0 million tonnes in the last decade. With ever increasing demand for food crops, there is an increase in fight for acreage; therefore, the only way forward to have increased production is to have an increase in productivity.

Solidaridad together with the Solvent Extractors’ Association of India (SEA), has initiated the “Mustard Mission” in the year 2019. The objective of mission is to increase the production of Rape-Mustard to 20 million tonnes by 2025, by increasing the yield and crop diversification of land from wheat-rice to Mustard. The Directorate of Rapeseed-Mustard Research is engaged for providing technical knowledge support.

Sustainable Vegetable Oil Mission

## 53% INCREASE IN PRODUCTIVITY OF MUSTARD IN MODEL FARMS

In the year 2021-22, 500 model farms were set-up covering 20000 famers across 6 districts of Rajasthan and Madhya Pradesh. The independent study undertaken by one of the renowned research agency MART, highlights that the model farms project has been highly effective while supporting rapeseed-mustard farmers to produce more with the adoption of recommended agronomic practices. The study inferred that the average productivity of the Model Farms is 53 % higher than the productivity of the control group. The mission is well aligned with the honorable prime minister's call for *Atma-nirbhar Bharat* and for doubling the income of farmers.

## INDIAN SUSTAINABLE SOY STANDARD (ISSS)



The Soybean Processors' Association of India (SOPA), along with the Indian Institute of Soyabean Research, Solidaridad and with the support of key soy industries and businesses, developed the "Indian Standards for Sustainable Soy (ISSS)". The standard was launched in the International Soy Conclave-2021.

The journey of ISSS was started in the year 2015, with the conceptualization of National Platform for Sustainable Soy by the Indian soy sector stakeholders. India being one of the major soy producers among top five countries and considering the global concerns for

sustainability, the Indian soy industries have come forward for the development of Indian Standards for Sustainable Soy (ISSS). ISSS is considered as India's own sustainability benchmark for sustainable soy production and trade. It has been developed with the objectives to define country specific sustainability criteria for improving the soy productivity, better socio-economic conditions of farmers and workers and reducing the ecological footprints while enhancing the competitiveness of Indian soy industries in the global market.

## SOYA MAHAKUMBH



The three-day conglomeration "Soya Mahakumbh" representing soybean supply chain stakeholders was jointly organized by the ICAR-Indian Institute of Soybean Research; Society for Soybean Research & Development, Solidaridad and SOPA at Indore during 29-31 May, 2022. The inaugural programme was conducted in the august presence of Honble Kailash Chaudhary Union Minister of State for Agriculture; Kamal Patel, Minister of Agriculture, Madhya Pradesh; Dr Trilochan Mahapatra, Secretary DARE and Director General, Indian Council of Agricultural Research, New Delhi, Shankar Lalwani, Member of Parliament from Indore, ICAR-IISR Director Nita Khandekar and other eminent personalities. About 2500 farmers have attended the event on the first day. During the event more the 54 exhibitions were set-up by the research institutions, agri-tech companies, input dealers, seed processors, R&D organizations and development agencies.



Overall, Solidaridad is committed towards the transformation of Indian vegetable oil sector with the core focus on self-sufficiency in the vegetable oils in India.

### Contact Us:

Dr Suresh Motwani, Head – Veg Oils, Solidaridad  
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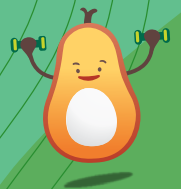


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