Potential of coconut oil in Domestic and International market

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Coconut oil (CNO), the prime commercial value added product from coconut is traded all over the country since time immemorial. Copra is a highly valued commodity in the world market for oilseeds, oils and fats. With an oil concentration of 65 to 70 percent copra is the richest source of fat. Copra is the dried meat (endosperm) with moisture content reduced to 5-6% from 50 to 55% in the wet meat. Coconut oil constitute less than 5% of total oils and fats entering in to the world market. It is a mixture of chemical compounds called glyceride containing fatty acids called glycerol. Coconut oil processing methods are classified in two major types, the dry and wet processing. The oil extraction technology which use copra as raw material is called dry processing while the method that uses fresh coconut is generally called wet processing for production of virgin coconut oil. The world production of copra in 2018-19 was 4.23 million tons, while that of coconut oil was 2.88 million tons accounting for nearly 43% of the nuts produced. It rank ninth position among nine major edible oilseeds produced in the world contributing 1.44% of total oil produced by these countries. Rest of the nuts was used for either fresh for culinary purpose, tender nut and other value added products. Percentage contribution of nine major oil seeds in the world is shown at table-1.

> **Coconut oil and Virgin coconut oil are gaining global importance as a contributing factor for health, nutrition and wellness of human being. Multiple medicinal and nutraceutical properties of CNO are being revealed day-by-day. This new development in health sector brought unprecedented increase in the demand of CNO.**

India is the largest producer of coconut which

Share of CNO in Global Vegetable Oil Production (Oct-Sept 2018/19)

Sl. No	Product	Quantity (in Million MT)	% share	Change over 10 years
1	Palm Oil	75.59	37.82	+67%
2	Soybean Oil	56.50	28.28	+56%
3	Rape Seed Oil	25.31	12.67	+17%
4	Sunflower Oil	20.01	10.01	+53%
5	Palm Kernel Oil	7.99	4.00	+52%
6	Cotton Seed Oil	4.68	2.34	No change
7	Groundnut oil	3.73	1.87	-10%
8	Olive Oil	3.13	1.57	+4%
9	Coconut oil	2.88	1.44	-12%
	World Total	199.82	100.00	+46%
Source: Oil world 2019				

sustains economic wellbeing of nearly 12 million families. Coconut was declared as oil seed of tree origin in the year 1990 by the Government of India to give emphasis on the importance of coconut as an oil seed for price support operations and a separate status was given to this crop and not included in the other oil seed group. Since then Government of India considers this crop for fixing minimum support price every year to protect the farmers from price fall.CNO especially VCO is gaining global importance as a contributing factor for health, nutrition and wellness of human being. Multiple medicinal and nutraceutical properties of CNO are being revealed day-by-day. This new development in health sector brought unprecedented increase in the demand of CNO

Competition from other oilseed crops

A comparison of world production of nine major oilseeds given in this paper vide table-1,clearly shows that the growth in production of coconut oil had been very weak, decreasing from 3.26 million tons in 2009-10 to 2.88 million tons in 2018-19.As against this production of other vegetable oil shows a tremendous increase during the same period. Palm oil production has increased from 45.27 million tons to 75.59 million tons registering 67% increase during 2018-19.While the production of soya bean oil increased from 36.11million tons to 56.50 million tones,rape seed oil increased from21.72 million tons to 25.31 million tones and sunflower oil increased from 13.04 million tons to 20.01 million tones. To sum up, while the world production of major vegetable oils increase from 46% in the last ten years, the corresponding increase during the same period in coconut oil was negative -12%. In palm oil and soya bean oil; it has recorded an increase of 67% and global market compared to other major oils coconut oil enjoys a greater consumer demand because of its unique characteristics. It maintained its demand in the domestic and international market both in the edible and non-edible sector unaffected and uninterrupted by other oils because of its uniqueness

Unique characteristics of coconut oil

Coconut oil has maximum digestibility coefficient(99.3) and it is more rapidly digested than any other fat including butter. It contains higher percentage of healthy fat, Medium Chain Saturated Fatty acids (MCSF) particularly lauric and myristic acids. Only two other vegetable oils. Viz. Palm kernel oil and Babassu oil have almost the same characteristics. Coconut oil has highest saponification value (253) which gives hardness and leathery property to soap. Coconut oil is classified under non-drying oil because of its lowest iodine value. Coconut oil has largest percentage of glycerol (13.84%) which is an important by product which is used in various industries especially in pharmaceuticals, food and oleo chemical industries. Unlike other edible oils, coconut oil can be used for cooking without refining. CNO obtained by direct processing of wet kernel (virgin coconut oil) and by crushing good quality copra in clean surroundings are used for cooking without refining. Coconut oil has highest smoking point ranging from 250 to 350 degree F and is good for high heat cooking compared to other oils. Shelf life of coconut oil is the highest because of the presence of anti-oxidants; VCO has a shelf life of one year. Another important advantage of coconut oil is that it is an important feed stock of oleo chemical industry. It is having a unique advantage of having

World Production of Coconut Oil production Vs Export-2018-19

Sl. No.	country	Production of CNO (in lakh MT)	Percentage share	Export of CNO (in MT)	Percentage share
1	Philippines	11.00 (75%)	38.17	9.54	48.97
2	Indonesia	7.50 (45%)	26.05	6.75	34.66
3	India	6.23 (30%)	21.60	0.07	0.36
5	Others	4.07 (6%)	14.13	3.12	16.01
	World	28.80 (43%)	100.00	19.48	100.00

Source: Oil world/ Coco info International 2019

fatty acids composition falling with the carbon chain spectrum highly desired by Oleo chemical industry.

World Production of coconut oil vs Export and Import

Coconut oil, the prime commercial product from coconut contributes nearly 2% of total supply of vegetable oil in the world. Philippines is the largest producer of coconut oil, which convert over 75% of coconut produced in the country in to 11.00 lakh tons of oil, while Indonesia uses 45% followed by India using 30% producing 7.5 tons and 6.23 tons of coconut oil respectively in 2018-19. Srilanka on the other hand converts only 9% for oil production, as over 70% of total production is used for household purposes. Coconut oil has substantial use in oleo chemical and cosmetic industries apart from its use as edible oil. Its uses as a diesel substitute and source of energy have been highlighted. It is evident from table - 1 that coconut oil production was decreased by 12% over the last 10 years. The world production in 2009-10 was 3.26 million tons which was decreased to 2.88 million tons in 2018-19.The global exports of coconut oil was 19.48 lakh tones in 2018- 19. Decrease in coconut production due to the cyclone to coconut plantations, prevalence of large number of senile and unproductive palms which are being replanted in a phased manner are the main reasons for the decrease in CNO production in the world. Philippines is the largest exporter of coconut oil with a share of 48.97 percent, followed by Indonesia (34.66 %).Though India is one of the major producers of coconut oil in the world, the country exports coconut oil in only small quantities recording a meager share of only 0.36% in 2018-19. Country wise production and export of CNO is given in table-2.

India's share of coconut oil export has declined significantly during 2017-18 and 2018-19 due to the very high domestic price of coconut oil and hence export has become noncompetitive. The domestic price of CNO in India went up by 2.5 to 3 times than that of international price. The international price of other major vegetable oils also ruled at a very low level during the same period. This has resulted in the decline of CNO export from India in 2017-18 and 2018-19. In such situations India should lay more emphasis on exports of high value products rather than on less competitive primary commodities so as to increase the value realization.

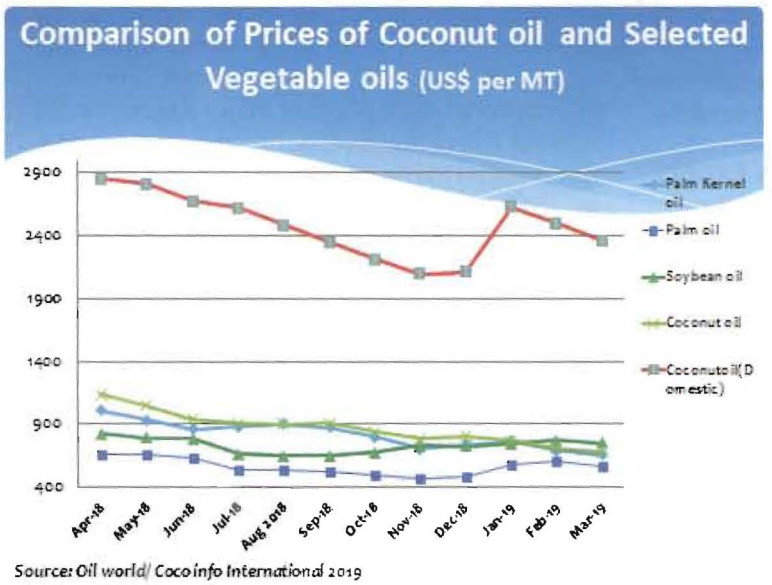
Malaysia is the largest importer of coconut oil with a share of 32 percent closely followed by USA (31 percent) and EU (10 percent). EU, USA and Malaysia accounted for about 73 percent of global imports of coconut oil. India does not import coconut and copra, though it imports small quantities of coconut oil. India was a net importer of coconut oil till 2009-10, but became a net exporter during 2010-11 to 2017-18 except in 2014-15. India's exports of coconut oil increased by about five times in 2016-17 (33,500 tones) over 2015-16, but declined significantly to seven thousand tons in 2018-19. Imports were also negligible in 2018-19.

Domestic and World Price of Coconut oil

The domestic and international prices of CNO and other major edible oils from April 2018 to March 2019 are given in table 3 and its trend presented in the graph. It is observed that domestic wholesale prices of coconut oil have been much higher than international prices. There has been a significant rise in domestic prices of copra and coconut oil from 2017 onwards. However, domestic prices were

Comparison of prices of Coconut oil & selected Veg. oils (US doll./MT)

Name of the oil	2018 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Jan	Feb	Mar
Palm Kernel oil	1009	937	861	881	904	874	800	704	742	765	695	655
Palm oil	664	660	633	545	534	524	499	475	489	585	603	573
Soybean oil	827	793	786	665	654	651	681	734	726	748	773	750
Coconut oil	1138	1049	942	908	903	907	840	787	806	773	710	682
Coconut oil (Domestic)	2850	2808	2678	2620	2485	2346	2214	2100	2111	2627	2502	2363



Source: Oil world/ Coco info International 2019

lower than international prices during 2016 but thereafter it increased significantly. The 2018-19 domestic prices of CNO is significantly higher than the international price and it is almost 2.5 to 3 times higher than the international price and price of other major vegetable oils, palm kernel oil and soybean oil in the international market as shown in table 3

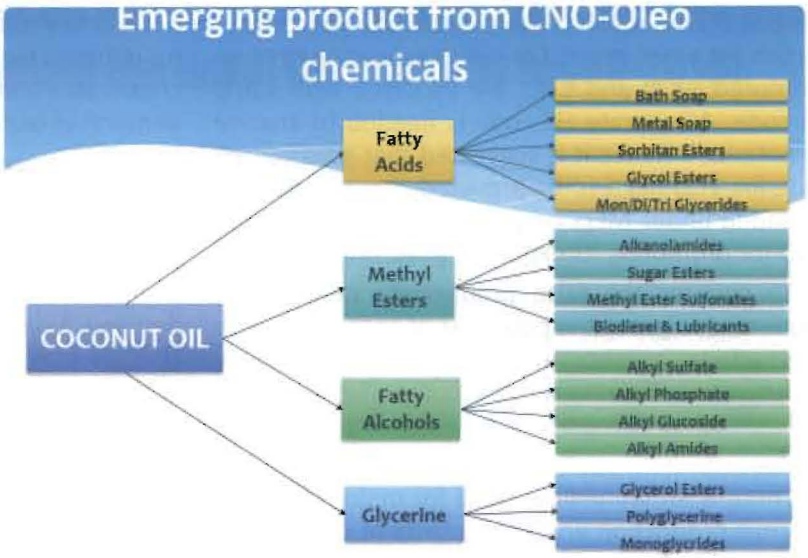
Scope and prospects of Value addition to CNO

Value addition reflects the difference between the price for which a firm sold its product and the cost involved in purchasing of input by them. Processing coconut is a means of value addition and increasing farm income. But the extent of value addition from processing coconut in to traditional products like copra and coconut oil is low due to high cost of production and less margin. Hence product diversification for high value added products is one of the approaches that could increase farm income. Though India is the largest coconut producing country in the world, utilization of coconut in to high value added products is low compared to other major coconut growing countries. Hence it was found difficult to survive the industry depending on copra and CNO alone because its share in the edible sector at international and national level is very low and also pose competition with other vegetable oils with less cost of production. Its price also depends on demand and supply of other edible oils with less cost of production. Hence copra-coconut oil centered industry has been diversified and tremendous progress is achieved in the field of product diversification and by-product utilization in the world.

Virgin coconut oil, the highest value addition from raw coconut

Virgin Coconut Oil (VCO) introduced in the world market in 2000-2001 gave new dimension to coconut production, ie produce coconut for health and beauty. It differs from normal CNO mainly in its physical form of source. it method extraction and its subsequent benefits. The VCO contains biologically active components reported to enhance health and wellness. Hence it has got popularity as a functional food .It is rich in fatty acids, includes minerals vitamins and antioxidants. It has a wider use in neutrceutical and cosmoceutical products. It is a fastest growing product in the niche market. Over the last ten years the export experienced a fast growth among value added products from coconut. Philippines is the largest producer and exporter of VCO. Tremendous growth of export of this product was reported in Philippines. Export reached over 42 export destinations: USA (59.7%), Netherlands

(10.1%), Canada (8.5%) and balance to Europe, China, Japan, Singapore, Australia and SE Asia. Prices range between US$6,000 and 8,000/MT FOB Manila. Compound Annual Growth Rate of global demand of VCO projected during 2019 to 2024 is 9.5% and VCO market projected to reach 5 billion US dollars by 2024 (Reseachnester.com 2019). In India also the demand for VCO for domestic as well as export is increasing due to the increased awareness on the health benefits of this product.



Source: ASEAN Oleo chemicals Manufacturers Group & Philippines Oleo chemicals Manufacturers Association

VCO is one of the high value products from coconut. Return from coconut can be increased many fold by establishing VCO processing units. Production of one kg of normal CNO requires 10 coconuts, where as for production of one kg VCO requires 17 coconuts. At the present retail price of coconut @ Rs.20/-per nut of inputs required for production of 1 kg of normal CNO is Rs.200/-and retail price of one 1 kg packed CNO is Rs.220/- to 230/-, the extent of value addition is 20 to 30%. The cost of input required for production of 1 kg VCO is Rs.340/-and the retail price of bottled 1 kg VCO is Rs.900/-to Rs.1000/-, the extent of value addition is 200%.Under these circumstances processing of coconut into VCO is much profitable than normal CNO. Hence more emphasis shoud be given to increase its production and marketing.

Coconut oil raw material for oleo chemicals for higher value addition

Oleo chemicals are basic chemicals derived from natural oils such as coconut oil and fats. Coconut oil is an important feed stock material to oleo chemical industry because of its unique fatty acid composition which falls under the carbon spectrum highly desired by the oleo chemical industry. Palm kernel oil only has the composition almost similar to CNO. The main products are fatty acids, methyl esters, fatty alcohols and glycerol used in a wide range of industries. The main utilization currently is in the production of detergents, soap and cosmetics.

Use of coconut oil in oleo chemical industry is not new. Malaysia and Philippines had already started this business. Oleo chemicals produced from CNO is called coco chemicals. In view of major threats being posed by other vegetable oils it would be appropriate to seriously consider dependence on CNO as edible oil. Major CNO producing countries are less dependent on it as edible oil and is using it more in industrial sectors. Coconut oil is one of the most important raw materials for oleo chemical Industry in Philippines. There is huge demand for oleo chemical products in the domestic and international market. Basic oleo chemicals are further processed to produce oleo chemical derivatives. Fatty acids are one of the basic oleo chemicals present in coconut oil which is used as starting material for wide variety of oleo chemical products. The price of key oleo chemicals such as fatty acids and fatty alcohols is twice the price of inputs such as crude coconut oil and palm kernel oil. When the price of coconut oil in the international markets is 1159 US dollars the price of oleo chemical (fatty acids) is 2286 US dollars. One unit of coconut oil gives out 0.93 units of various coco chemicals and resultant products sell at a much higher price. Estimates have shown that an addition of 1200 dollars per ton of CNO exported can be earned with this value addition. This value addition is presently generated by the importing countries. The main constraints now faced by the oleo chemical industry is instability in supply of raw material and availability of competitively priced CNO.

The Way Forward

Considering the increasing demand of Virgin Coconut oil in domestic and international market, more emphasis should be given to increase coconut oil production especially VCO. In view of the

increasing demand for organic VCO in the export market, promotion of organic certification of coconut garden for production of organic coconut need to be promoted. VCO and CNO are exported with same HS code. A separate HS code is needed to analyse its potential. Hence it is suggested that separate HS code for VCO need to be provided. The reward rate extended under MEIS may be provided to VCO and CNO for promoting its export by government.

To counter the false propaganda need to be conducted to prove the goodness of coconut oil with international collaboration for promoting as edible oil. Impress upon international bodies like WHO,FAO and UNDP to recognize the health importance of CNO

There is an immediate need for major efforts to improve production and productivity of coconut. To ensure reliability and availability of CNO supply for both edible and non edible market, development agencies should pursue programmes to increase production and productivity.

The major threat being faced by other vegetable oils calls for intensified efforts towards diversification for different high value added products including oleo chemicals especially lauric acid because of increased demand of laurate in the international market.

Policy support and public investment is needed by Governments to foster inclusive growth and sustainable development of the coconut oil industry. Production of copra and CNO in more coconut growing states need to be promoted to meet the increasing demand. Assistance extended to other oilseeds under NMOOP may be extended to coconut also in addition to the support extended under MIDH. Modernization and automation of processing units to increase productivity and to reduce cost of production is also required. ■

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Cabinet approves Minimum Support Price for Copra for 2020 season

The Cabinet Committee on Economic Affairs, chaired by Prime Minister Shri Narendra Modi, has given its approval for the Minimum Support Prices (MSPs) for copra for 2020 season.

The MSP for Fair Average Quality (FAQ) of milling copra has been increased to Rs. 9,960/- per quintal for 2020 season from Rs. 9,521/- per quintal in 2019 and the MSP for ball copra has been increased to Rs. 10,300/- per quintal for 2020 season from Rs. 9,920/- per quintal in 2019. This will accrue a benefit of Rs 439/- per quintal in the milling copra and Rs 380/- increase in the Ball Copra. This is to ensure a return of 50 percent for milling copra and 55 percent for ball copra over the all India weighted average cost of production. The approval is based on recommendations of the Commission for Agricultural Costs and Prices (CACP).

The increase in MSP for copra for 2020 season is in line with the principle of fixing the MSP at a level of at least 1.5 times the all India weighted average cost of production which was announced by the Government in the Budget 2018-19. It assures a minimum of 50 percent as margin of profit as one of the important and progressive steps towards making possible doubling of farmers' incomes by 2022.

The National Agricultural Cooperative Marketing Federation of India Limited (NAFED) and National Cooperative Consumer Federation of India Limited (NCCF) will continue to act as Central Nodal Agencies to undertake price support operations at the MSP in the coconut growing states. Last year when there was crash in prices in Tamil Nadu, the timely intervention by Govt of India through purchase at MSP, this pushed the market sentiment upward benefitting the copra farmers. India is number one in production and productivity of Copra in the World.