



Supply Chain Dynamics of Coconut Products in India



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Introduction



- Scientific Name: *Cocos nucifera*
- Family: Arecaceae
- Shape: Elongated to Spherical
- Weight (Avg.) : 850-3700 g
- Varieties: More than 20 varieties grown in India
- Types: Tall & dwarf
- Common name: King of Palms

Coconut consists of:

- Exocarp i.e. Thick hard skin
- Mesocarp i.e. husk
- Endocarp i.e. shell
- Endosperm i.e. kernel
- Internal cavity filled with water



- Coconut called as **Kalpa Vriksha (Tree of Heaven)**
- It is also called as **Tree of Life, Tree of Abundance, Tree of Plenty**, etc.
- Each and every part of the coconut palm is useful to man in one way or another.
- The word **coco** derives from the word **monkey** because the nut resembles a **monkey's face**.
- Coconut is one of the most important commercial crops in many tropical countries and contributes significantly to Indian economy.
- About **1 crore** people depend on its cultivation and processing.
- 48% of coconut produced is consumed as **raw nuts**,
- 30% for milling copra for **oil extraction**,
- 8% as **edible copra** and
- 4% for coconut cream, milk, and other **by-products**.





THE NUTS

- Seed material
- Water
 - natural health drink and sport beverage
 - processed coconut water with flavourings
 - vinegar
 - coconut cassareep
- Coconut meat
 - culinary use
 - cream
- milk
- grated/shredded (frozen or desiccated)
- jelly bits
- gluten-free flour
- animal feed
- oil
 - * refined, unrefined
 - * biodiesel
 - * cosmetics
 - * soaps
 - * pharmaceuticals



THE HUSK/COIR

- Rope
- Matting
- Coarse cloth
- Horticulture (potting medium)
- Brushes
- Biofuel
- Mosquito repellent
- Compost
- Cushion filler
- Particle board

THE SHELL

- Activated carbon
- Charcoal
- Handicraft
- Utensils
- Planting medium



THE FLOWERS

- Pollen (collected and used in hybridization)
- Vinegar
- Sugar
- Rum



THE LEAVES

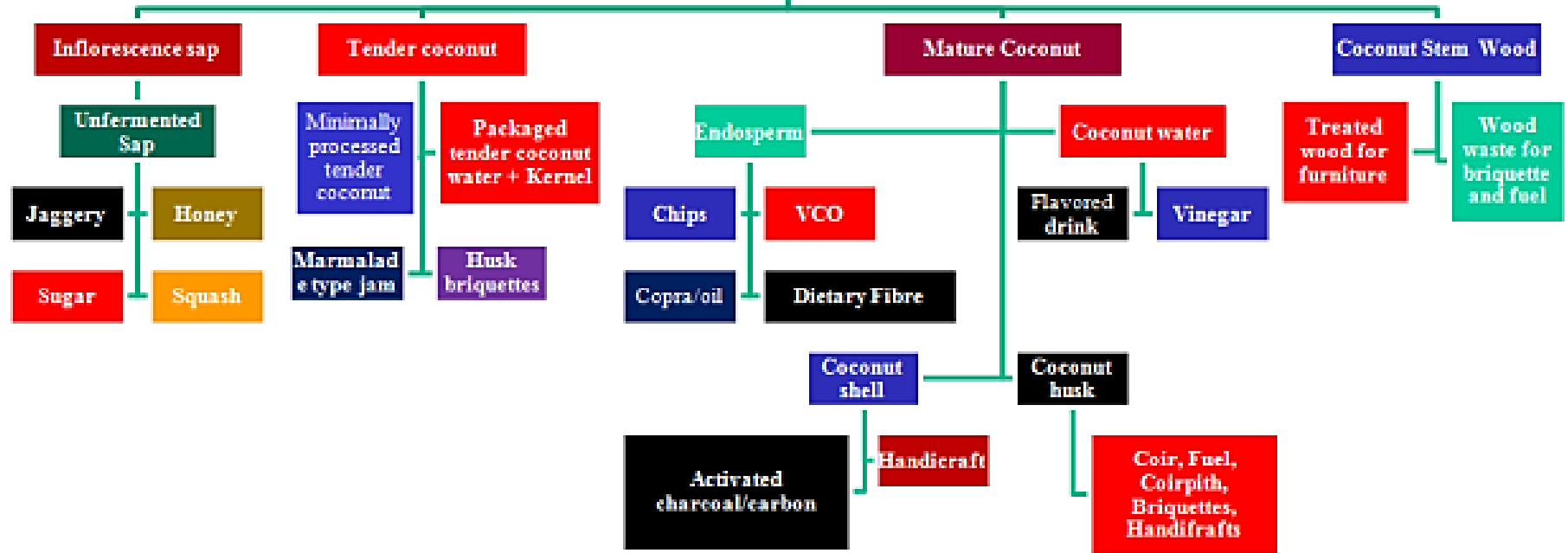
- Thatch roofing
- Handicraft (woven into baskets, mats and hats)
- Brooms



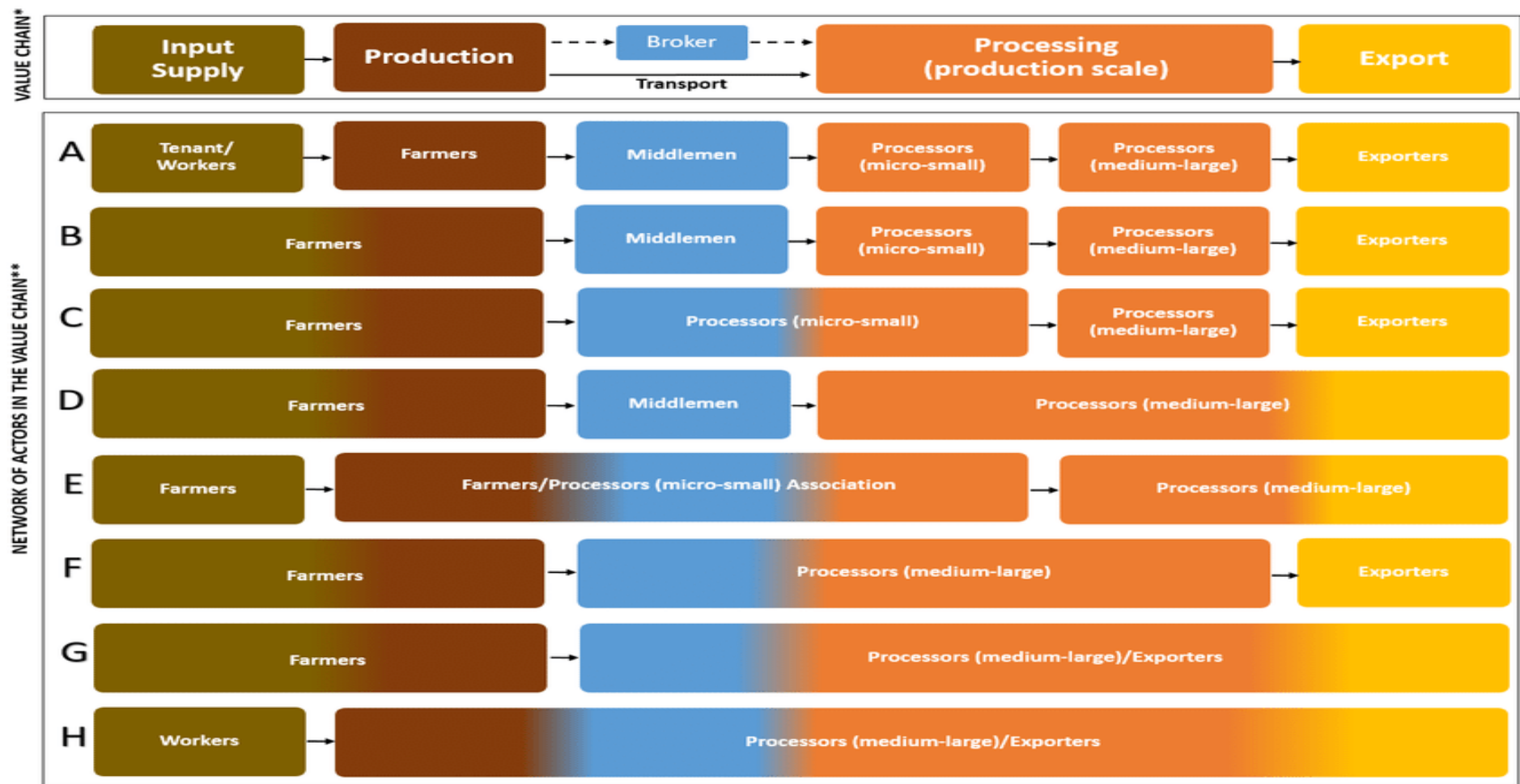
THE TRUNK

- Building construction
- Flooring
- Furniture

Coconut Value Addition



Comprehensive value chain of coconut



Different uses of coconut and its products



Plant part	Use
Root	Beverage, fuel, medicine for intestinal complaints, coughs, antiseptic lotion for wounds & mouth wash
Stem	Timber, particle board
Leaves	Thatching houses, place mat, fruit tray
Inflorescence	Gin, toddy
Coconut meat	Copra, coconut oil, oil cake for animal feed, desiccated coconut
Pith	Soil ameliorant, filler in thermoplastic industries, oxalic acid
Coconut water	Vinegar, soft drink
Coconut shell	Mail rack, lamp shade, charcoal, shell flour, mosquito coil
Husk	Rope, yarn, brush, floor mat, door mat

Health Benefits of Coconut

- ▶ **Coconut kernel is nutritious and rich in fiber, vitamins and minerals.**
- ▶ **Coconut is a natural anti-bacterial and anti-viral food.**
- ▶ **Coconut fibre is added to Indian dishes by eating fresh or dried coconut**
- ▶ **Dietary fibre in coconut protects against heart attacks and strokes.**
- ▶ **Diet rich in coconut kernel prevent digestive disorders and it regulates bowel activity.**
- ▶ **It restores thyroid functions and increases the metabolic rate.**

Properties of Coconut oil



- ▷ **Coconut oil has high levels of saturated fats, but more than 2/3 of these fats are medium chain triglycerides which are pretty healthy.**
- ▷ **Coconut oil is good for frying foods as it is stable at high temperatures.**
- ▷ **Coconut oil does not get stored in the body easily and can be used to induce weight loss.**
- ▷ **Despite high levels of saturated fats, it is good for health as long as it is not refined or hydrogenated.**

Export prospects for various coconut products



Copra

- ▷ **Copra is the dried kernel of coconut. It is from copra that coconut oil is produced. Copra contains the highest percentage of oil as compared to other oil seeds.**
- ▷ **The two broad varieties of copra are milling copra and edible copra. Milling copra is used for extracting oil whereas edible copra is used in condiments and in religious and social functions. The major exports of copra is to Bangladesh and Nepal.**

Coconut Oil

- ▷ **Coconut oil is used both for edible and non edible purposes.**
- ▷ **It is also consumed in various industrial applications, soap, shampoo, detergents, etc.**
- ▷ **A portion of coconut is also used in the making of ice creams and biscuits, chocolates which can be described as industrial purposes though the finished products are edible.**
- ▷ **Coconut oil is exported mostly to the Gulf Region Consumed by Ethnic Population**
- ▷ **Contrary to misconceptions, coconut oil does not elevate total blood cholesterol. Instead, it increases HDL or the friendly cholesterol, lowers harmful LDL cholesterol and serum triglycerides.**
- ▷ **Coconut oil mainly exported to the Gulf region.**

▷ **Virgin Coconut Oil**

- ▷ Virgin Coconut Oil (VCO), extracted from fresh coconut meat without chemical processes is said to be the mother of all oils.
- ▷ It is rich in medium chain fatty acids, particularly lauric acid and is a treasure trove of minerals, vitamins, antioxidants and is an excellent nutraceutical. It has about 50 lauric acids, having qualities similar to mothers milk, thus confirming its disease fighting ability.
- ▷ Virgin Coconut Oil finds application as skin oil, massage oil, baby oil and consumed in USA / Europe for reducing obesity.

Desiccated Coconut

- ▶ Coconut has been the staple food of people in many parts of Asia and Pacific Islands.
- ▶ The dehydrated shredded flesh of coconut known as desiccated coconut is often used as a substitute to grated coconut in food preparations such as curries, cakes, sweets and chutneys.
- ▶ Confectionery and bakery units are the main consumers of desiccated coconut.

Spray Dried Coconut Milk Powder

- ▶ The Spray Dried Coconut Milk Powder is now available in convenient and ready-to-use packs with the same freshness of a fresh coconut milk.
- ▶ It has longer a shelf life and is convenient to use.

Activated Carbon

- ▶ Coconut Shell is used for manufacturing a variety of products of commercial importance including activated carbon. Shell based activated carbon is extensively used in the process of refining and bleaching of vegetable oils and chemical solutions, water purification, recovery of solvents, recovery of gold etc. It is used in gas masks and a wide range of filters for war gases and nuclear fall outs. Coconut shell based activated carbons units adopt steam activation process to produce good quality activated carbon.
- ▶ Activated Carbon is made both by the organized and un-organized industry
- ▶ There are 18 medium sized Companies in India who make activated Carbon using state-of-the-art machines. The other manufacturers are tiny manufacturers in the un-organized sector.
- ▶ The present exports is directed at United states, UK, Germany, Japan, France. There is an enlarged market potential for activated Carbon because of its unique natural properties.

Tender Coconut Water

- ▷ The water of Tender Coconut is a sterile, nutritious, thirst quenching health drink.
- ▷ The pure and sweet tender coconut possesses enormous therapeutic properties and is a thirst quenching refreshing health drink for all age groups.
- ▷ It is loaded with natural sugars, salts, and vitamins and is low in fat, calories and has no cholesterol.
- ▷ It's a highly rejuvenating tonic that can ward off fatigue in an instant.
- ▷ Tender coconut water has the same level of electrolytic balance as we see in our blood. Technology available for packing preserving TCW.

Coconut Based Handicrafts

- ▶ **Coconut Handicrafts made out of the wood shell, fibre/husk and leaves of the coconut tree have high decorative value and serve as a value addition bringing with it the aesthetic touch and exquisiteness wherever it is used**
- ▶ **The timber can be converted into doors, windows, wall panels, banisters. Coconut fibre is used to make coir products such as bags, table mats, sandals, wall hangings etc. Coir mats and carpets are also made out of the coconut fibre.**

Coconut Based Products



Coconut Kernel based products



Virgin Coconut Oil



Coconut Inflorescence based food products



Coconut Milk



Coconut Chips



Coconut Oil



Coconut Shell Powder



Coconut Shell Charcoal



Coconut Water Based Products



Coconut Palm Sugar



Coconut Flower Syrup



Copra



Coconut Biscuits



Coconut Statistics

India & World



*Coconut is grown in more than 93 countries
of the world*

Origin and Distribution



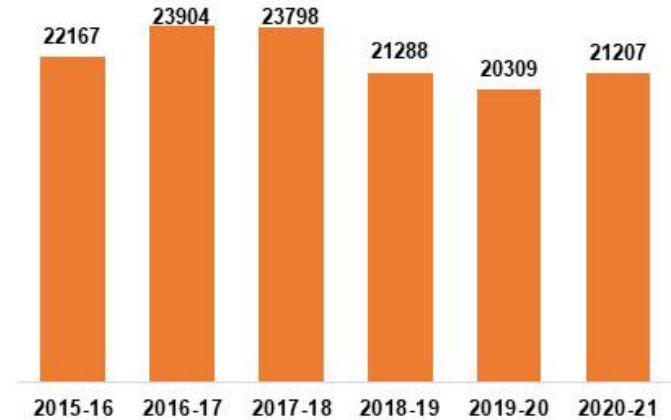
- Coconut was originated and **domesticated in Malaysia** where it was widely distributed
- It was introduced in prehistoric times to the mainland of Asia, and **reached East Africa before 1492**
- **All tropical areas** are suitable for coconut cultivation
- Philippines, Indonesia, **India**, and Sri Lanka are the major producers of coconut, in world.

Indian Coconut production trend



- ▶ India is one of the **largest coconut-producing country** in the world and accounted for about **31.45%** of the **total world Coconut production in 2021-22**, with a production of **19,247 million nuts**.
- ▶ Coconut plays a significant role in Indian economy and contributes around **Rs. 3,07,498 million** (US\$ 3.88 billion) to the country's **Gross Domestic Product (GDP)**
- ▶ Coconut provides food security and livelihood opportunities to **>12 million people in India**.
- ▶ Coconut is a **fiber yielding crop** for **>15,000 coir-based industries**, providing **employment** to nearly **6 lakh people**.

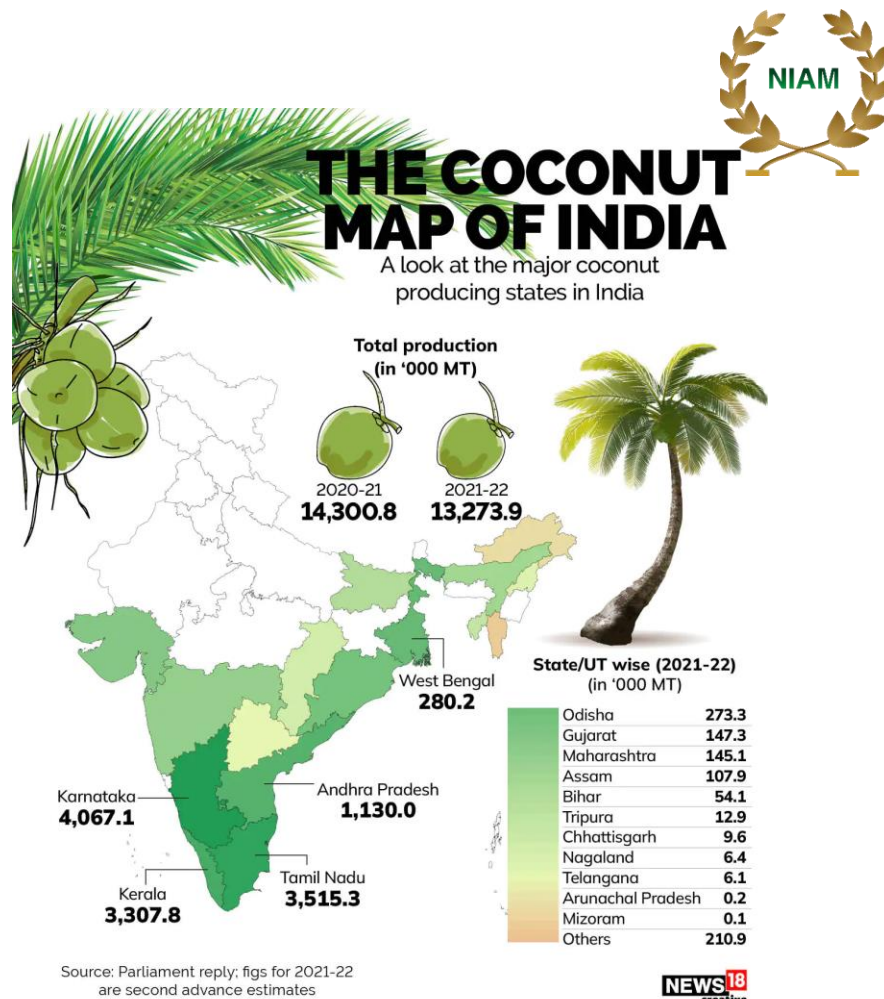
India's coconut production trend (million nuts)



Source: Horticulture Division, Dept. of Agriculture & Cooperation, Ministry of Agriculture & Farmers Welfare

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- ▶ Coconut productivity in India of **9,123 nuts per hectare (2021-22)**; is one of the highest in the world.
- ▶ Copra processing, coconut oil extraction and coir manufacturing are the traditional coconut-based activities in the country.
- ▶ India's coconut production is **majorly** situated in **Kerala, Karnataka and Tami Nadu and Andhra Pradesh**, accounting for **89.13% of area** and **90.04% of production**. Other coconut-producing states in the country are West Bengal, Orissa and Gujarat.



Indian Coconut Export trend



- ▷ India plays a prominent role in the global coconut and related products supplies.
- ▷ During **2021-22**, the **coconut exports of India** crossed Rs. 3,236.83 crore (US\$ 393 million) mark, an **increase of 41%** from the previous year.
- ▷ Between **2015-16** and **2021-22**, the **total coconut exports** from **India** grew at a **CAGR of 13%**.
- ▷ This strong export growth is helping create more employment required in the production of various coconut-based products such as coconut chips, coconut milk, coconut sugar, coconut water, tender coconut water, coconut honey, coconut jaggery, coconut milkshake, coconut snacks, virgin coconut oil, coconut natural cream, etc. that are seeing high export demand.
- ▷ There are about **sixty-three top exporting ports in India** that trade coconut and related products to its export destinations.

India's coconut exports trend (US\$ million)



Source: Coconut Board of India

Indian Coconut Export trend



- ▷ **India exports coconut to more than 140 countries around the world.**
- ▷ **The major importers of coconut from India are Vietnam, UAE, Bangladesh, Malaysia and USA.**
- ▷ **Indian Coconut exports to these top 5 countries are valued at Vietnam (US\$ 29.6 million), UAE (US\$ 16.61 million), Bangladesh (US\$ 14.63 million), Malaysia (US\$ 11.27 million), and USA (US\$ 5.84 million), accounting for 66% of the exports from India.**
- ▷ **The share of major importers of Indian Coconuts are Vietnam (25%), followed by UAE (14%) and Bangladesh (12%)**
- ▷ **Cochin port exports most of the coconut shipments from India with a share of 30%, followed by Tuticorin port with 19% share of total coconut exports.**

Indian Coconut Oil Export trend



- ▷ In 2016, India started exporting coconut oil to countries like Malaysia, Indonesia, and Sri Lanka, the countries from where it was getting imported earlier.
- ▷ India commenced export of **desiccated coconut to USA and Europe** in large quantities under the initiative of the government along with **Coconut Development Board (CDB) in 2016** to assist the coconut farmers in production, processing, marketing and export of value-added coconut products.
- ▷ The **main** destination for **coconut oil exports** from India are **UAE, Saudi Arabia, the US and Vietnam**.
- ▷ The fastest growth in Indian coconut oil exports was witnessed in countries like **Saudi Arabia, the US and Vietnam in 2019-20**.
- ▷ **India's coconut oil exports** were valued at **US\$ 31.8 million in 2020**, making it the **13th largest exporter of coconut oil in the world**.
- ▷ Coconut Oil was the world's 467th most traded product, with a total trade of \$5.12B (2020).
- ▷ Global **coconut oil exports grew** between **2019 and 2020** by **7.16%**, from **US\$ 4.78 billion to US\$ 5.12 billion**.
- ▷ Trade in Coconut Oil represent 0.031% of total world trade. (OEC data)
- ▷ **Global coconut products market size** was at **\$11.5 billion** in **2018** which is expected to expand up to **\$ 95.40 billion** by **2025** with a growth rate of **17.5% annually** over the period.

Factors which may impact coconut exports in future



- ▷ According to research, the coconut industry's worth is expected to reach \$31 billion in 2024.
- ▷ This increasing demand is anticipated largely due to the commodity's popularity with health-conscious consumers, as well as consumer goods companies marketing coconut products as healthy options.
- ▷ Coconut oil is used as a food with major antimicrobial and anti-cancer benefits.
- ▷ The use of coconut oil as a shortening was advertised in the United States in popular cookbooks at the end of the 19th century.
- ▷ The health-promoting attributes of coconut oil and those functional properties useful to the house maker were recognized 100 years ago.
- ▷ These attributes, in addition to some newly discovered ones, may be of great interest to both the producing countries as well as the consuming countries

Constraints faced by coconut farmers in marketing



- ▷ **High fluctuation in coconut prices due to unstable market**
- ▷ **Price fixation and bargaining between intermediaries and farmers**
- ▷ **Absence of authorized and authentic source of market information**
- ▷ **Irregular and late payment by intermediaries**
- ▷ **Limited market information on price**
- ▷ **High commission or brokerage**
- ▷ **Inefficient regulated market**
- ▷ **High transportation cost**
- ▷ **Inadequate storage facilities**

Constraints faced by market intermediaries



- ▷ Improper market information
- ▷ Unavailability of required quantity due to seasonal variability in coconut production
- ▷ High marketing costs
- ▷ Lack of institutional support
- ▷ Lack of good quality coconut
- ▷ Long distance markets and fluctuating fuel prices lead to high marketing costs

Constraints faced by processors



- ▷ Lower capacity utilization of industrial units due to lack of market promotion and availability of coconuts
- ▷ Underutilized processing units leading to increased production costs
- ▷ High price fluctuation
- ▷ Inconsistent raw material supply
- ▷ Absence of institutional support in terms of technology, credit facility and market information.

Strength of Indian Coconut Sector



- ▷ Coconut industry employs rural youth and women
- ▷ Coconut products have huge demand in both domestic and export markets
- ▷ Access to good technologies (Virgin Coconut Oil, Packed Tender Nut Water, minimally processed Tender Coconuts, Activated Carbon)
- ▷ Dominant ethnic population in the Gulf, UK and US
- ▷ Being a natural and eco friendly product, coconut has a future and potential for earning carbon credit
- ▷ Central and state govt. agencies are helping in manufacturing and marketing of coconut products
- ▷ Many private organizations are involved in manufacturing and selling of Coconut based products
- ▷ Promotes better utilization of natural resources

Weaknesses of Indian Coconut Sector



- ▷ Inconsistent raw material supply
- ▷ High price fluctuation
- ▷ Lack of market information
- ▷ Presence of large number of intermediaries in marketing
- ▷ Inadequate efforts for market expansion, conduct market research, publicity and promotion has resulted in stagnation of coconut industry
- ▷ Lack of awareness about possibility to manufacture various coconut based products
- ▷ Entrepreneurs lack technical knowledge
- ▷ Entrepreneurs lack motivation to promote their products and explore new markets
- ▷ Short supply of skilled labours
- ▷ Use of obsolete machineries due to limited capital availability in case of small & medium sized units
- ▷ Electricity problem
- ▷ Difficulty in getting credit finance from banks

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- ▷ The price of the coconut in the country is dependent on the prevailing price of copra & coconut oil which is characterized by recurring violent fluctuations.
- ▷ The behavior of coconut oil price is relatively dependent on overall supply of oils and fats in the country.
- ▷ The fluctuation in the price of the coconut oil simultaneously reflects on the price of coconut.
- ▷ The volatile price situation often ends in the negligence of the coconut gardens, leading to attack of pests and diseases and low productivity.

Opportunities for Indian Coconut Sector



- ▷ Stable and expanding export and domestic market
- ▷ Coconut industry is labour intensive and generates rural employment coconut and its value added products should be provided benefits under Vishesh Krishi Udyog Yojana, FPS, Duty draw back
- ▷ Great prospects for developing different Value added products [Virgin Coconut Oil (VCO), Geotextiles etc.]
- ▷ Low domestic Coconut oil consumption
- ▷ Demand of alternative fuel (coconut methyl ester-biodiesel)
- ▷ Increased exposure to international markets through regular participation in important fairs and exhibition
- ▷ Allowing exports of Coconut Oil from all southern ports in India
- ▷ Harmonising national standards with international standards for coconut products

Threats of Indian Coconut Sector



- ▷ Poor global image in supply chain reliability
- ▷ Competition from other tropical oils (palm oil and palm kernel oil)
- ▷ More stringent sanitary & phyto-sanitary standards
- ▷ Rupee appreciation vis-à-vis the dollar
- ▷ Freight disadvantages
- ▷ Geographical distance from end markets
- ▷ Competitive advantages of South East Asian Countries in the world market



Thanks!

Any questions?

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