



# Coconut sector in India experiencing a new regime of trade and policy environment: A critical analysis

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## Abstract

Of late, Indian coconut sector is facing unprecedented crises on account of various macro and micro level factors. The productivity of the crop is constrained by low input use efficiency in conjunction with other biotic and abiotic stresses, which are priority areas of research. The aspect of mechanization also deserves adequate importance, considering the scarcity of skilled labour. Above all, the most important facet is value addition, which should be strengthened to mitigate the issue of low profitability of the sector. The post-World Trade Agreement (WTA) and ASEAN Treaty regime witnessed integration of plantation economies across the globe that resulted in fierce competition among producing countries. This paper addresses the pertinent issues on various facets of coconut economy by employing appropriate economic tools of analysis. The facets covered include trade aspects, global competitiveness, production economics, price analysis, policy level impediments and marketing issues. We have found that as far as the export markets of coconut value added products are concerned, India is comparatively a very small player with paltry export market shares. However, in recent times, Indian export sector has become vibrant with very high growth rate since Coconut Development Board (CDB) has been upgraded to the status of Export Promotion Council (EPC). Indian coconut sector has huge domestic demand, comparatively higher productivity, strong research support and technology delivery systems. In spite of these positive aspects, concerted efforts are lacking to effectively utilize the possible linkages between them for increasing the production and marketing efficiencies and enter the high value global chains. Sustainable coconut economy could only be achieved through integrated development of cultivation and industry coupled with a stable market.

*Keywords:* Coconut, economics, trade, value chain, policy

## Introduction

Presently, coconut growers are more exposed to economic risks and uncertainties owing to the high degree of price fluctuations. For brightening the future prospects of a sustainable coconut sector, it is imperative to delink the sector from the dependency on coconut oil and enhance the production of diversified value added products (Jayasekhar *et al.*, 2016a). Further, to ensure the livelihood security of those dependent on the sector, it is of paramount importance to strengthen the value chain of the coconut through appropriate forward and backward integration of the chain. Relatively low proportion of family labour participation in farming and consequent higher share on wage labour component in the cost of

production, render coconut farming costly and debilitate its competitiveness (Jayasekhar *et al.*, 2016b). The entailing built-in rigidities in the cost structure make it difficult to adjust at times of price fall, indubitably pointing towards the farmers' refrain from coconut cultivation unless and until they find the enterprise remunerative. Keeping abreast of the race in productivity alone cannot guarantee success or even survival in an activity exposed to unmediated global competition (Harilal, 2010). It is imperative to think beyond the periphery of production and productivity especially when a wide range of other issues plague the coconut sector. This sector in the country is internationally integrated and faces fierce competition from other major coconut producing countries especially in the post World Trade Agreement (WTA) and ASEAN treaty era.

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Despite the importance of coconut with respect to its economic, nutritive and health contributions, coconut farming in India has been lately considered as unremunerative. The present study traverses through crucial aspects of Indian coconut economy to reflect upon the issues and challenges confronted in the sector.

### Materials and methods

The paper examines the global trade scenario through the lens of market share analysis. The study also attempts to look into the looming crisis in the coconut sector and impediments experienced in the trade of coconut and its products. The data on global aspects of coconut and coconut products was collected from Asian and Pacific Coconut Community (APCC) [now renamed as International Coconut Community (ICC)] statistical year book (APCC, 2016) and UNCOMTRADE database (Comtrade, 2018). The domestic data on coconut and its products was garnered from Coconut Development Board, Kochi (CDB, 2018) and EXIM databank (Government of India, 2018). The earlier studies conducted on impact of free trade agreements on plantation sector, price analysis and product diversification were critically reviewed (Veeramani and Gordhan, 2011; Jayasekhar *et al.*, 2014) and optimally utilized for the present analysis. A semi structured interview schedule was employed to collect the details of marketing aspects of coconut sector from the stakeholders of the coconut market chain. The aspects on production economics was analysed through a purposive sampling method wherein farmers across various economic strata were selected and the data was compared with the recommended scientific package of practices.

### Results and discussion

#### Trade aspects

The total value of exports in the case of coconut products during the year 2016-17 was found to be ₹ 20617 million, which is 42 per cent higher than that of the export earnings of the year 2015-16 (Table 1). On the other hand, the imports of coconut products to India in the year 2016-17 (valued at ₹ 2706 million) was observed to be 29 per cent less than that of the value of imports during 2015-16 (valued at ₹ 3832 million). The major coconut products imported to India was

copra meal (coconut oil cake), which accounts for 96 per cent value share of total imports. Importantly, the import of coconut oil to the country has come down to around 9 MT during the year 2016-17 from 2759 MT imported during the year 2015-16.

**Table 1. Export-import of coconut products: India**

Year	Export value (₹ million)	Import value (₹ million)
2007-08	690.1	559.3
2008-09	1798.0	1030.8
2009-10	2197.5	1071.6
2010-11	4959.2	1207.7
2011-12	9432.9	2098.8
2012-13	10223.6	1919.0
2013-14	11561.2	2311.1
2014-15	13123.8	4216.6
2015-16	14502.4	3832.6
2016-17	20617.0	2705.9

Source: CDB (2018)

It was observed that the import intensity of the coconuts and coconut products are at low levels (Table 2) and thereby will not influence the domestic price behaviour of the product. Moreover, as far as the international trade is concerned, India can boast a robust domestic market in comparison with other competing counter parts. Furthermore, the coconut and coconut oil are in exclusion list of ASEAN India Free Trade Agreement (AIFTA), which provides temporary immunity for the domestic coconut oil sector. Nonetheless, the commodities in the exclusion list are subjected to periodic revision and there is all probability that coconut oil will be included in the reduction list sooner or later. In such a scenario, the immunity of the coconut oil from the cheaper imports will be lost and eventually there will be huge price crash in the domestic coconut oil sector.

#### Global competitiveness

It is imperative to have a look at the international trade scenario of coconut value added product exports. While comparing with other major global exporters, the share of India in coconut product exports is meagre (Table 3). Though it is an accepted fact that India holds a robust domestic market in the coconut sector, it is high time that India emerged as a

**Table 2. Coconut imports, production and import intensity**

Year	Import (₹ million)*	Production (million nuts)	Value output (₹ million)	Import intensity**
2009-10	1071.7	16918.4	203020.8	0.53
2010-11	1207.8	16942.9	203315.0	0.59
2011-12	2098.9	23351.2	280214.6	0.75
2012-13	1908.5	22680.0	272160.4	0.70
2013-14	2301.4	21665.2	259982.3	0.89
2014-15	2645.4	20439.6	245275.2	1.07
2015-16	3800.2	22167.4	266008.8	1.42
2016-17	2705.9	23904.1	286849.2	0.94

\*HS Code : 0801, EXIM Data bank, Department of Commerce

\*\*Quantity of import as percentage of value output

major export player by upgrading its position in the global value chain of coconut exports. The Philippines and Indonesia together contribute the major world export share of coconut oil, copra meal and desiccated coconut. Sri Lanka too contributes substantially to the international exports of coconut milk, shell charcoal and coir products.

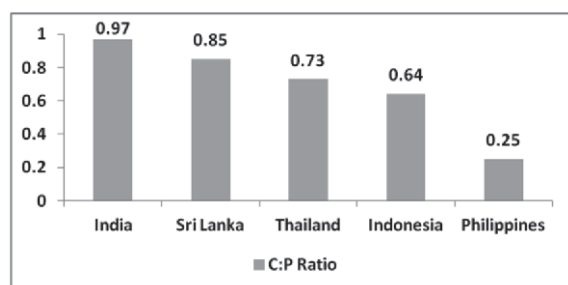
A major proportion of coconut produced in India is consumed domestically (Fig. 1). On the other hand, the Philippines consume only 25 per

cent of its coconut production domestically. The economic logic always point towards the correlation between the domestic consumption and export growth. In most of the cases, when there is a market surplus developing outward market orientation, there will certainly have a first mover advantage as well. This is exactly what happened with the Philippines and now they are the most competent exporter with respect to coconut and coconut products. Nevertheless, India, of late, has been making concerted effort to penetrate their products in the high value export segments.

**Table 3. Percentage share of world exports of coconut products**

Sl. No.	Product	Country (percentage share)			
1.	Coconut oil	Philippines (42)	Indonesia (35)	Malaysia (9)	India (0.30)
2.	Copra meal	Philippines (64)	Indonesia (34)	Others (1.9)	India (0.004)
3.	Desiccated coconut	Philippines (25)	Indonesia (20)	Sri Lanka (12)	India (1)
4.	Coconut milk/cream	Indonesia (51)	Sri Lanka (44)	Philippines (4)	India (0.30)
5.	Coconut shell charcoal	Indonesia (70)	Sri Lanka (20)	Philippines (7)	India (0.30)
6.	Coir and coir products	Sri Lanka (42)	Thailand (12)	Indonesia (10)	India (25)

Source: APCC (2016)



**Fig. 1. Consumption-production ratio of coconuts**

### Production economics: Domestic level

Cost of production of coconut in Kerala state, India, based on data from a well-managed coconut garden, is ₹ 8.94 per nut. In this scenario, about 56 per cent of the total cost incurred is due to labour charges. This shows the higher per unit labour charges prevailing in Kerala, which can be attributed to higher labour demand and higher cost of labour in Kerala. In addition, lack of availability of sufficient skilled labourers for harvesting of coconut leads to higher cost of cultivation of coconut in Kerala. Currently, the wage rate prevailing in Kerala is around ₹ 700 per day, which is one of the highest costs prevailing for agricultural labour in India. About 26 per cent of the total cost is for purchasing manures and fertilizers and plant protection chemicals. Total cost of cultivation per hectare is ₹ 1,40,800 with an average productivity of 90 nuts palm<sup>-1</sup> year<sup>-1</sup> (Table 4). The processing cost for copra is around 24 per cent of total cost. The copra recovery per nut is @ 120 g and cost of production of copra is ₹ 83.25 kg<sup>-1</sup> (Table 5).

**Table 4. Cost of production of coconut**

Inputs	Cost (₹)
Organic manure	22440
Chemical fertilizers	9860
Labour charges (fertilizer application)	23800
Irrigation (including labour)	23000
Plant protection	3200
Harvesting	42000
Miscellaneous expenses	3500
Overhead charges	13000
Total cost ha <sup>-1</sup>	140800
Av. yield (nuts ha <sup>-1</sup> )*	15750
Cost of production (₹ nut <sup>-1</sup> )	<b>8.94</b>

\*Calculated @ 90 nuts palm<sup>-1</sup> year<sup>-1</sup>. Number of palms ha<sup>-1</sup> is 175

**Table 5. Cost of production of copra**

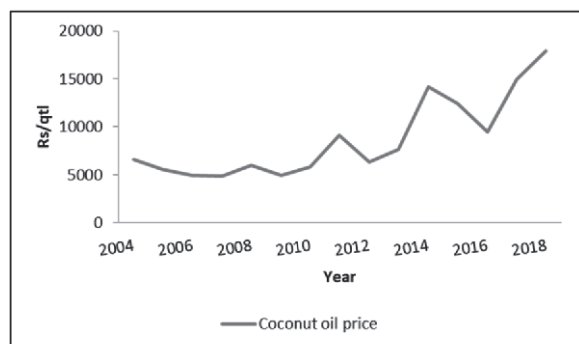
Cost is calculated for 1000 nuts	Cost (₹)
Cost of production of 1000 nuts	8940
Processing cost of copra	2450
Total cost	11390
Sales of by-products	1400
Net cost	9990
Recovery of copra (kg)	120
Cost of production (₹ kg <sup>-1</sup> )	<b>83.25</b>

### Analysing the prices

Beyond any degree of doubt, in the recent times, trade related issues, market access and attractive prices are the major factors shaping up investment decisions in coconut farming enterprise. The above mentioned factors assume much more importance than that of the increase in productivity, which otherwise conventionally considered as the single crucial component. The coconut farmers in India are so far concentrated in the upstream end of the coconut value chain, without any functional upgradation.

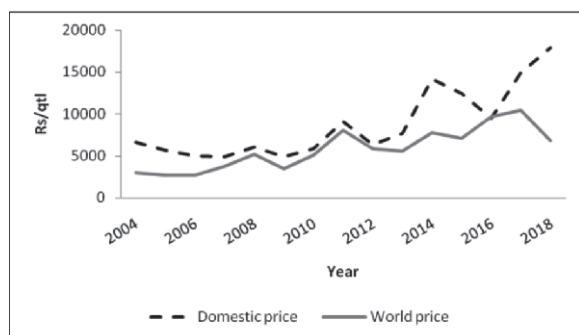
As a matter of fact, the confidence of coconut farmer can be elevated only when a stabilized price regime is experienced for a reasonable period. Analysis of coconut prices for over a decade (2004-18) depicts the increasing price volatility, especially in the recent years (Fig. 2). The prices were declining from 2004 till 2009 with comparatively low price fluctuations. On the other hand from the year 2010 onwards, the price fluctuations were quite apparent wherein the prices started rising and reaching peak levels during the mid-2011 after which it plummeted to low levels. But again from the beginning of 2013, the prices started improving and the prices continued as attractive and all over again, from 2015 onwards the sector has been experiencing a price crash regime, followed by a price rise regime in 2018. Jnanadevan and Jayasekhar (2011) attempted to characterize the earlier price rise regime (during 2011). They have put forth the argument that the price rise regime experienced in the coconut sector is linked with the supply crunch of coconuts and copra coupled with huge industrial demand for processing and exports. They have provided corroborative evidences in the form of increasing export growth rate, inefficient copra procurement and low levels of supply and general supply deficit in edible oil sector. They have

also rightly argued that the bubbles of price rise regime is not helpful for the sectoral prosperity, as these sort of price boom periods are not long-lasting enough to instil confidence in the coconut farmers to have a serious reorientation towards scientific farming approaches.



**Fig. 2. Price movement of coconut (2004-2018)**

Besides, the analysis of demand-supply scenario using stock-use ratio revealed that there is a declining demand for coconut oil from 2012-13 onwards and the wedge between demand and supply has been narrowed down. This, of late, has certainly reflected in realization of low prices for the commodity. It was observed that there was huge price wedge between domestic and international prices (Fig. 3). As the prices will tend to integrate, there is a possibility for a price crash in the near future.



**Fig. 3. Coconut oil: Movement of domestic prices and international prices**

### Policy level impediments

For the past two decades, plantation sector in India has been confronting a commodity crisis, arguably, an offshoot of the ongoing trade liberalization. The regional trade agreements such as AIFTA has made the crisis even worse due to

the adverse policy frame in the form of phased tariff reduction and fixation of import tariffs at extremely low-level. In this context, it would be erroneous to view coconut sector in isolation, because the trade and tariff decisions on competing crops as well as edible oils in general would straight away affect the coconut sector as well. In Table 6, tariff reduction schedule of the special products are depicted, wherein the reduction commitment of palm oil (an immediate substitute of coconut oil) is notable. Unprecedented growth rate in palm oil imports in recent times is also a matter of concern in view of the domestic prices of the coconuts. The possibility of lowering the existing tariff structure of special products in the forthcoming review meetings of AIFTA is also bothersome.

**Table 6. Mandatory tariff schedule for special products**

Tariffline	Base rate	2010	2015	2019
Crude palm oil	80	76	56	37.5
Refined palm oil	90	86	66	45
Coffee	100	95	70	45
Tea	100	95	70	45
Pepper	70	68	58	50

Source: Harilal (2010)

With the ongoing liberalization process across the world, proliferation of regional free trade agreements (RTAs) has become inevitable. There will be differential impact of such trade agreements on different sectors and it is important to safeguard the plantation sector in general and coconut in particular in the forthcoming RTAs. In view of this, it is imperative to conduct studies on challenges faced by the coconut sector at micro and macro levels to bring out plausible strategic action plans for the sectoral reorientation. It is also crucial to envisage appropriate policy options with regard to the trade and tariff structures of coconut sector and to ensure such sectoral details are appropriately represented in the national and international dialogues.

It is always better to have a floating import duty structure on edible oils, so that the tariffs can be adjusted in relation to the international prices of edible oils to stabilize the domestic price fluctuations. But in the case of palm oil in India, the import duty was always hovering around five per

cent, irrespective of the international price movements. The flawed tariff fixation of such pattern had detrimentally affected the domestic price scenario (and movements) of the coconut oil in the country. Therefore, it is vital to regulate the edible oil tariff structure, so that the state machinery can adopt flexible policy options to control the price fluctuations of coconut oil.

### **Issues related to procurement and marketing**

The studies on marketing margins and costs are important as they reveal many facets of trade, price structure and the efficiency of the system. The 'price spread' is associated with the movement of a commodity from the producer to consumer wherein the actual costs involved in the transaction at various nodes as well as the margins accrued to various actors at different nodes are accounted. In general, the term 'price spread' in agriculture implies the 'producer's share in consumer's rupee'. The impact of risks is more severe in the case of perennials, in which heavy initial investments are made. Price spread analysis of coconut marketing revealed that near about 70 per cent of the farmers sell their produce through the village traders as raw coconuts.

Less marketable surplus due to small and marginal holding size is the major reason for the farmers for not undertaking copra or oil for sale. The marketing channel consists of village traders, whole sellers and retailers who in turn sell their products to oil millers and retailers and send some of their lots to up country markets as raw nuts, edible or ball copra. Predominant marketing channel identified is:

Producer-Copra maker-Oil miller-Whole seller-Consumer

In Kerala conditions, which are the same in many countries with predominantly small holder coconut gardens, the producer share in consumer rupee was found to be around 64 per cent and the market chain consumes as much as 36 per cent share in the total value chain. Higher price spread always indicates a lower share of the final price to the producer. In other words it reflects the low marketing efficiency of the market channel. The price spread and marketing efficiency can be improved only through collective and constant efforts in terms of adoption of higher value addition technologies at individual or group level.

Coconut sector in India has been experiencing a low profit and low income regime for quite long and the impact is such that, the farmers lost their interest in scientific coconut based farming systems (Mani and Santhakumar, 2011). As of now, the prices of coconuts are attractive and this is the apt opportunity for creating awareness among coconut growers on integrated coconut based farming systems, the adoption of which can act as shock absorber in the event of failure or price crash of the main crop. It is an experienced fact that the coconut prices are volatile and unpredictable and there are close substitutes available to replace the coconut oil in the event of any supply shock or price crash. In this scenario, it is wise to redefine the present coconut farming methods more towards high density integrated farming, based on the agro-climatic specifications.

Coconut prices in India have been historically integrated with the coconut oil prices. Therefore, indubitably, the coconut prices received by the farmers are integrated with the Minimum Support Price (MSP) of copra. In general, the farmer prefers to sell fresh coconut when the price of coconut is attractive, as he receives a remunerative sum as ready cash and he can avoid processing and transportation charges. Contrary to this, if the copra and oil prices are lucrative; farmer prefers to do at least primary level processing which would augment farm level copra production. Therefore, the MSP for copra fixed at higher levels would certainly influence and act as an incentive for the primary value addition in coconut.

Having said this, it should be mentioned that the copra procurement system in the country has been functioning always at sub-optimal levels and never effective in lifting up the market prices to an optimum levels. The National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) is the apex state machinery controlling the copra procurement. The major issue faced by the NAFED in the event of huge procurement was, finding the appropriate market avenue to push the product with a reasonable margin and lack of such an avenue had resulted in market failures in the past.

Minimum Support Price (MSP) should be in such a way that it ensures an incentive for processing to the coconut farmers when compared with that of selling fresh coconut. Other pertinent factors in this context of discussion are lack of effectiveness and

efficiency in copra procurement by the agencies and inadequate infrastructural facilities for the storage of copra. It is noteworthy that for the most part of the year, copra is traded below MSP. The effectiveness and efficiency of price support mechanism can be enhanced only by means of adequate quantity of procurement and by ensuring that the genuine farmers are benefitted by the system of procurement. It is also important to design the procurement pattern in such a manner that adequate quantity is procured throughout the year, without any monthly restrictions.

### Conclusion

Lack of competitiveness of coconut oil compared to palm oil in the domestic market had adversely affected the domestic coconut sector and the excessive import of palm oil had frequently triggered price crash in coconuts. There is a need to re-calibrate the import duty structure and it is essential that within the framework of permissible limits the tariff rates for the import of palm oil, both crude and refined palm oil are enhanced to protect the interests of coconut growers. In view of the ineffective procurement of copra and raw coconuts in the state, it is suggested to establish block level/panchayat level hubs with forward and backward integration along with unit level collection centres under the supervision of Coconut Producer Society (CPS) networks. The potential area of the coconut sector is the agri-business, based on value added products of coconuts. The breakthrough products developed from the coconuts have the export potential and thereby in long run, the price stabilization in the domestic coconut sector is also possible. In view of the proliferating regional trade agreements, hereafter the modalities of such a commodity specific trade agreement should be worked out with utmost care wherein we should end up in a win-win situation. In this respect we need to thoroughly analyze the existing tariff structure of each APCC countries and an unbiased

tariff reduction schedule should be proposed. It is also important to consider the existing tariff structures of close substitutes/competing products of each countries and there by arriving at a consensus.

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