

# A Future for Sri Lanka's Desiccated Coconut Industry

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*The declining trend in desiccated coconut production, while market prices kept rising, has been a clear indicator of the crisis that beset Sri Lanka's coconut industry. The obvious solution is to eliminate the problems that retarded increased production, argues S. A. C. M. Zuhyle who is an assistant manager at the Coconut Processing Board in Colombo.*

Coconut production has been fluctuating between 2,400 and 2,700 million nuts per year with the unusual increase to 2,963 million nuts in 1972, to a drop of 2,031 million in 1974 and an exceptional 1,825 million nuts in 1977 owing to a record drop in output. The fluctuation in production is characterised by weather conditions, variations in the application of fertiliser and foreign market conditions for exportable coconut products such as desiccated coconut, fibre, oil, charcoal and copra. Both 1972 and 1974 had been remarkably unusual years. Within the period 1965-77 due to favourable weather conditions that prevailed in 1971 and the substantial fertilizer application on coconut lands in 1972, nut production increased to a record figure of 2,963 million nuts. On the contrary, the steep drop to the level of 2,031 million nuts in 1974 was characterised by the drought that prevailed in that year, and the negligence of the estates by management, on the eve of nationalization of the estates which were brought under the Land Reform Commission.

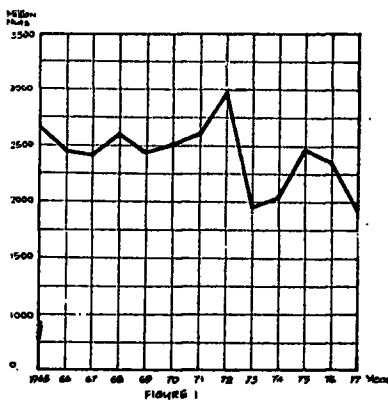
It is clear, as illustrated in figure 1, that the trend line is declining, which indicates a falling production.

Following the trend, the nut production for 1980 and 1990 could be estimated at 2,374 and 2,230 million nuts respectively. Comparing the forecasted figures with the actual production figures of 1975 (2,447 million), a drop of 3 per cent in 1980 and a 9 per cent drop in 1990 is expected. This fact has to be considered against the increas-

ing local consumption by our growing population.

## LOCAL CONSUMPTION

Local consumption of coconut is estimated to be 125 nuts per person per annum. Considering the population projections for the future (based on a study by Gavin W. Jones & S. Selvaratnam) the projected consumption of coconuts for the period 1973-1990 must steadily increase. On the same basis the percentage of domestic consumption of nuts in 1980 is estimated to increase to 71.5 per cent of total production and in 1990 it would be 79 per cent of total production which would leave only 28.5 per cent in 1980 and 21 per cent in 1990 for the purpose of industrial production and export. If the decline in the availability of nuts (for industrial purposes) is left unchecked, it would result in a serious curtail-



Coconut Production in Sri Lanka 1965 - 1977

ment of desiccated coconut production thereby directly affecting the country's exports.

## D.C. EXPORTS

Sri Lanka desiccated coconut is mainly exported to the continental market while the U.S.A. market is monopolised by the Philippines. (1977 witnessed a dramatic breakthrough by the Philippines with the U.K. and European markets as the recent data shows. A large part of the usual demand that Sri Lanka was unable to meet was captured by the Philippines). In terms of quantity, 65 - 70 per cent of the purchases are generally made by

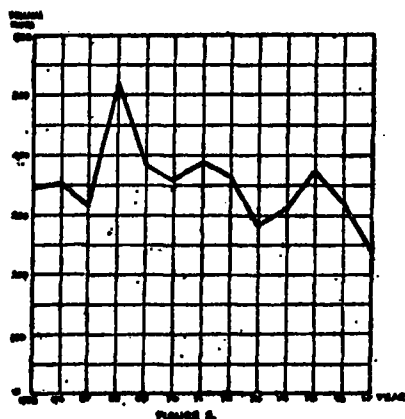
the principal buyers in Western Europe such as the United Kingdom, the Federal Republic of Germany, France, Netherlands and Spain. However, the variations in market conditions in such countries seriously affect the local desiccated coconut trade due to this concentration and dependence on only these markets. When the contracted buyer decides to purchase less, say due to increase in the price of sugar — (i.e. sugar is a complementary item for the end-use of desiccated coconut), our sales naturally drop. To a large extent therefore, the Sri Lanka desiccated coconut industry is at the mercy of these purchasing countries. For example, in 1975, when Australia decided to purchase most of its desiccated coconut from the Philippines for internal reasons, our sales there dropped from 1,321 long tons in 1974 to 183 long tons in 1975.

Due to various governing factors, such as market conditions, variations in demand for confectionery in the buyer countries etc., the world desiccated coconut export market varies. However, apart from the world market conditions the local conditions such as the availability of nuts, (depending on the nut production) and conditions in the consuming countries of our desiccated coconut, exports had been fluctuating between 300-400 million nuts (converted to nut equivalent on the basis of 300 lbs. per 1,000 nuts — though the out-turn per 1,000 nuts varies, depending on the seasonality and on a regional basis, an average of 300 lbs is observed to be a justifiable rate). Considering the thirteen year period 1965-1977, one could observe an exceptional rise up to 517 million nuts in 1968 and an unusual drop of 285 million nuts in 1973.

The highest ever export of desiccated coconut, approximately 70,000 tons, bringing in about Rs. 164 million and contributing a then record foreign exchange earnings in 1968, was indeed an unusual occurrence. (The Rs. 323 million earned in 1977 was also an exceptional occurrence). The unusual situation in 1968 was caused by the unfavourable weather conditions in Philippines in that year resulting in a short supply of coconuts. As a result the principal buyer of Philippine desiccated coconut, the United States, purchased 13,000 cwts. of desiccated coconut from Sri Lanka while due to increased demand, Canada and the European countries too purchased

increased quantities. (This situation appears to have been reversed, in favour of the Philippines, in the U.K. and European markets in 1977).

The lowest ever production of 39,000 tons of desiccated coconut in 1973, was a severe set-back caused by the prolonged drought in 1972 and the curtailment in the application of fertilizer. The coconut pest



Desiccated Coconut Exports by Volume 1965 — 1977 (Nut equivalent in million nuts)

which attacked the plantations also caused a drop in nut production which in turn affected desiccated coconut production. Yet, in this particular year the low volume of desiccated coconut produced did not affect foreign exchange earnings which remained as high as Rs. 119 million. Apart from these two unusual years the production on the whole shows a declining trend and the future of the exports, according to the present trends, could be a threat to the entire coconut industry.

The fluctuation in export performance and declining trend is pictorially shown in figure 2. From this trend it could be estimated that desiccated coconut exports in 1980 and 1990 would be 328.9 and 293.9 million nuts respectively. These estimated figures with 1975 exports reveal approximately a 12 per cent drop in 1980 and a 21 per cent drop in 1990 which is a dangerous declining rate from the point of view of the industry.

Table I SRI LANKA EXPORT OF DESICCATED COCONUTS (nut equivalent in million nuts) — 1965—1977

Year	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Quantity	345	352	315	517	382	360	390	367	285	315	375	345	240

MARKET PRICE OF DESICCATED COCONUT

The export prices for the Sri Lanka desiccated coconut has been fluctuating on an upward trend. Apart from times of exceptionally varying market conditions it has always shown this rising trend since 1966.

two major exporting countries. This trend is characterised by the increasing demand in the buyer countries. But as it was noted earlier there is a contrasting picture in that the local export of desiccated coconut has been on the decline over the years. If the necessary steps are taken, however, the declining local production trend could

Table II AVERAGE MARKET PRICE PER POUND OF DESICCATED COCONUT (1965 — 1977)

Year	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Price per lb.	.52	.47	.49	.79	.58	.64	.57	.71	.89	1.41	.90	1.57	2.68
Rs. cts.													

Considering the movements of prices over the years one could observe that desiccated coconut prices are in an upward trend with attractive prospects in the future; yet falling nut production, as observed earlier, poses a threat to the upward trend in earnings.

be arrested and production geared to meet increasing world demand.

PRODUCTION CAPACITY

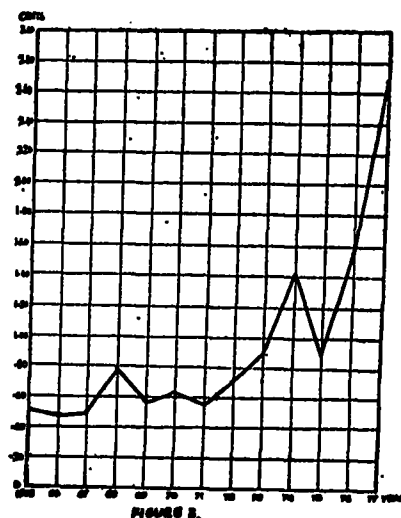
The desiccated coconut industry is mainly located in the coconut triangle with about 83 out of 86 mills being located in that area.

Table III DESICCATED COCONUT EXPORTS OF SRI LANKA AND THE PHILIPPINES (in nut equivalents) — (1965 — 1977)

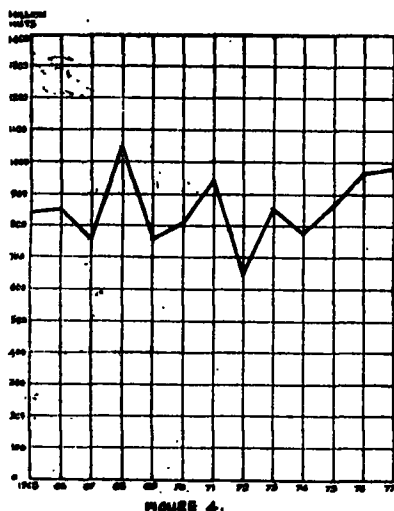
Year	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Exports in nut equivalents (million nuts)	840	850	760	1052	759	807	945	647	860	780	867	982	988

A study of the Sri Lanka's desiccated coconut production and exports would be incomplete if not compared with the trend of the other major exporting country — Philippines. Market conditions, such as demand for desiccated coconut, production and supply etc., is a determining factor for Sri Lanka exports. Nevertheless, the trend of the world production is also undoubtedly an influencing factor. For a complete study and forecast of the future of desiccated coconut in Sri Lanka, the trend of the combined Sri Lanka-Philippines production, as shown in Table 3, is of much relevance.

Considering the trend line of exports of both major desiccated coconut producing countries the possible increase of exports for 1980 and 1990 is 982.4 and 1,132.4 million nuts respectively, which shows a steady increase in exports by the



Market Price of Desiccated Coconut — Average price, rupees per lb. 1965 — 1977



**Desiccated Coconut Exports of Sri Lanka and the Philippines 1965 - 1977**  
(Nut equivalent in million nuts)

Though most of the desiccated coconut mills are conveniently located in the coconut growing area, the mills are never worked at maximum capacity. If maximum utility is obtained at a reasonable estimation of 230 days work per year, 73,000 tons of desiccated coconut could be manufactured (computed on the basis of an out-turn of 300 lbs. of desiccated coconut per 1000 nuts.) The total nut requirement would be approximately 545 million per annum. The actual production from 1965-77 had been far below the maximum capacity.

**Table IV D.C. PRODUCTION AND PERCENTAGE OF TOTAL ESTIMATED CAPACITY PRODUCED**

Year	1965	'66	'67	'68	'69	'70	'71	'72	'73	'74	'75	'76	'77
D.C. Prod: in nut equiv. m. nuts	345	352	315	317	382	360	390	367	285	315	375	345	240
% of the total capacity	63	65	58	94	70	66	72	67	52	58	69	63	44

It was only in 1968 that the boom for the desiccated coconut industry occurred where production reached near maximum capacity. At all other times production has been less than 75 per cent of full capacity. The desiccated coconut industry is faced with a number of drawbacks and as such, the mills could not be in continuous production. Some such handicaps are:

1. Bad machinery;
2. Uneconomic operation;
3. Administrative difficulties;
4. Labour problems.

The principal machinery used in the desiccated coconut mills are largely those desiccators which were discarded from the tea factories (except for a few mills which are using driers). As such, the machinery constantly breaks down and the managements face difficulties in obtaining spare parts which are not readily available in the market. Hence, the parts have to be turned out or searched for among the dismantled machines. This process involves a loss of several days work and contributes to a curtailment in production.

A good part of the coconut production gets transferred to the local consumption market since coconut production is heavily subject to seasonal fluctuations during the unfavourable (lean) seasons. During the lean period, coconuts fetch a very high price and as such, purchasing nuts at high prices becomes uneconomical for mill operators. Moreover, among the buyer countries desiccated coconut fetches a very high price during a particular season and at other times prices remain low. When desiccated coconut prices are low and nut prices are high it becomes more economical for the miller to either close down the mill or minimise his operations.

Administrative difficulties, labour problems etc., though not seasonal

or regular are other factors which affect production. For an increase in production one of the fundamental requirements is satisfactory mechanical working of machinery which could be achieved by modernising the existing machinery.

Another conditional factor for increase of production is the expansion of the market. The hitherto hardly tapped markets for Sri Lanka such as the U.S.A. and the Middle East countries can make a substantial contribution with regards to this aspect. Producing desiccated coconut according to the requirements of these countries would enable market expansion, particularly in the case of the United States market where extremely high hygienic standards are required. Production in conformation to these requirements would help increase production, utilizing the presently un-utilised capacity.

LAND EXTENT UNDER COCONUT CULTIVATION AND ITS UTILITY

#### LAND EXTENT UNDER COCONUT CULTIVATION AND ITS UTILITY

The coconut plantations are mainly concentrated in the so called 'Coconut Triangle' (with the apexes Chilaw, Negombo and Kurunegala) which also extends along the coast line up to Hambantota, and are scattered in blocks in the eastern coast and in the Jaffna peninsula. Apart from these, small plots are sprinkled over some parts of the central highlands as a mixed crop.

According to the 1962 Agricultural Survey Report, the extent under coconut cultivation as at 1st July 1962 was 1,152,418 acres. The breakdown is as follows:—

Holdings under 50 acres	—
843,626 acres	
Holdings of 50 acres and above	—
308,792 acres	

This was one of the only reliable estimates of the extent of acreage available. Subsequently certain amounts of land have been brought under cultivation while certain coconut lands have been taken up for road construction, building sites, overhead wiring etc. On the other hand 20,000 acres of uneconomic citronella lands and 20,000 acres under colonization schemes have been brought under cultivation. The acreage added to the coconut cultivation is not sufficient to offset the land that has gone out of production. Hence the existing land keeps contracting. Further the last five year plan did not provide for an increase in the acreage under cultivation and according to the plan the existing acreage at 1,150,000 was given as a stable figure.

#### NUT EQUIVALENT OF EXPORTS

The quantity of desiccated coconut manufactured out of 1,000 coconuts varies from season to season, regional wise. During the lean period the out-turn per 1,000 nuts is greater than in the season when

the crops are high in yield. Regionally coast line estate nuts are larger and provide a higher poundage than those of the interior lands. On this basis it has been observed that the out-turn per 1,000 nuts varies from about 260 lbs. to 350 lbs. Hence for purposes of computation of relative figures, for desiccated coconut, poundage per 1,000 nuts is rated as 300.

On this basis is also computed the estimated nut equivalent of desiccated coconut exported from 1965-77, as shown in Table V below.

either intensive or extensive cultivation, particularly the high yielding hybrid varieties. Such an action, and immediate action, would help to meet the increasing demand for desiccated coconut and enable Sri Lanka to remain a strong partner or competitor in the world desiccated coconut export market.

#### RELATED ECONOMIC ACTIVITIES

By-products of the desiccated coconut industry namely, shell charcoal and parings contribute a considerable amount to the econo-

exported except for a small portion which is retained for local industry.

Copra is another product which has necessarily come to stay with desiccated coconut production. As a result the high quality requirements for desiccated coconut, laid down in regulations by the Coconut Processing Board, all the coconuts purchased for processing could not be utilised for making D.C. In the case of nuts which are germinated or split open, if the possibility of contamination exists, such nuts are not permitted in production of desic-

Table V COCONUT PRODUCTION IN RELATION TO DESICCATED COCONUT EXPORTS

Year	1965	'66	'67	'68	'69	'70	'71	'72	'73	'74	'75	'76	'77
Nut prod. in millions	2681	2468*	2421	2601	2440	2510	2610	2963	1946**	2031	2447	2330	1921
D.C. Equiv. in million nuts	345	352	315	517	382	360	390	367	285	315	375	345	240

Source: \* Coconut Cultivation Board  
\*\* Central Bank of Ceylon.

According to Coconut Research Board sources the national average production per acre is 2,500 nuts. Taking this standard into consideration we find that the quantity of desiccated coconut exported in the form of nut equivalents as obtained from the acreage of coconuts cultivated is given in Table VI.

From Table VI we find that approximately 150,000 acres of coconut land are directly feeding the desiccated coconut export market.

#### REPLANTATION

The increasing rate of consumption at 125 nuts per head per year, also taking into consideration the growing population, would leave little and possibly no hope for exporting desiccated coconut in the 1990's. The only possible solution for the challenging phenomena is

my. While shell charcoal is exported in raw form and also in the form of activated carbon, parings is made use of for the manufacture of oil which is mainly used up by the soap industry, and the poonac received from this is utilized for the manufacture of poultry and cattle food. Fibre processing is another industry which goes hand in hand with the desiccated coconut industry. Though fibre mills do not necessarily operate alongside desiccated coconut mills, in some cases the fibre mills are located in the desiccated coconut manufacturing areas. The husks of the nuts which are used in desiccated coconut manufacture, find their way into the fibre mills where they are processed into various grades such as hackled, bristle, mattress and omat fibre. All these fibre products are

cated coconut. Such rejections total up to a considerable quantity in desiccated coconut mills each day and they are sent for copra curing and oil milling.

Most of the desiccated coconut mills in the island also have set up an oil mill which process all copra obtained from the rejected nuts and the parings. Copra unlike parings is graded into No. 1 and No. 2.

Oil extracted from No. 1 is either used for export purposes or for local consumption while the oil manufactured from No. 2 copra is sold in the local market for domestic use and sometimes for the purposes of soap manufacture and other industrial uses.

Another by-product obtained comes in the form of coconut water which otherwise goes waste. The

Table VI ACREAGE CULTIVATED AND EXPORTS OF DESICCATED COCONUT

Year	1965	66	67	68	69	70	71	72	73	74	75	76	77
D.C. Export (nut equiv)	345	352	315	517	382	360	390	367	285	315	375	345	240
Acreage expected (in '000s)	138	140.8	128	206.8	152.8	144	156	146.8	114	126	150	138	96

water is collected in a tank and left for a few weeks. Out of the sediment oil is extracted. This oil is really not obtained from water, but from the oil in the water. Such oil is used by the small soap manufacturers while the refuse which is called the "sediment poonac" is used as poultry food. The by-products of the desiccated coconut industry do not only contribute in large measure to the economy, but also generate many economic activities in the areas where the desiccated coconut mills are located.

The industrial processing of the above coconut shell products has become a major export industry in recent years with about 25,000 to 30,000 metric tons of these items being manufactured each year to meet the country's growing export demand. Coconut shell charcoal is the most important of these by-products, accounting for nearly Rs. 21 millions in foreign exchange earnings in 1977.

The local shell supplies come mainly from the DC industry while a small percentage is supplied by the copra manufacturers. About 10 to 15 percent of the total 600 million shells supplied is used up by domestic demands, mainly for fuel purposes, while the balance 80 to 85 percent is fully absorbed by the export trade.

The desiccated coconut industry as stated earlier employs a large amount of old machinery. As such, the maintenance and repair activities are very high. Hence this industry generates a considerable amount of mechanical engineering activities and certain establishments are now specialising in the mechanical activities related to the industry.

#### FOREIGN EXCHANGE EARNINGS

Coconut is the third largest foreign exchange earning cash crop of Sri Lanka and contributes significantly by means of its various industrial processing activities such as D.C. fibre, oil and charcoal manufacture. Unlike the other products of the coconut industry, how-

ever, desiccated coconut has always been contributing a steady percentage of the foreign exchange earnings. Except for the boom year of 1968 and a very favourable year in 1974, the contribution made to the foreign exchange earnings has been consistent at 4-5 per cent.

The increase in production of 25 per cent would result in a considerable increase in the amount of foreign exchange earnings.

#### CONCLUSION

Over the years the desiccated coconut industry has come to stay as an established part of our industrial sector. This industry, concentrated in the coconut triangle, has many tangible effects on the economy of the country. Foremost is that desiccated coconut exports are bringing substantial and steady foreign exchange earnings into the country. In addition to its own contribution of about 4½ per cent of the total foreign exchange earnings it also contributes by means of its earnings from the by-products earnings from charcoal, activated carbon, fibre, oil and copra to contribute a sizeable portion of the country's foreign exchange earnings. The desiccated coconut industry and the other charcoal, fibre and oil industries located in the coconut triangle generate further economic activities to a considerable degree. Many of the areas in which these industries are located are observed to be areas of "full employment" where most employable persons are directly or indirectly engaged in the activities of these industries.

The desiccated coconut industry which has provided a wide range of socio-economic benefits needs greater attention. It has been observed that coconut production is on the decline and on current estimates by 1980 and 1990 only about 28.5 per cent and 21 per cent respectively of local production would be available for industrial purposes.

The effect of declining nut production is matched with the declining export of desiccated coconut; in nut equivalent terms in 1980 this is estimated to be 328.9 million nuts and in 1990 to be 293.9 million nuts.

The declining nut production and consequently desiccated coconut production presents a contrasting picture when compared with the upward market price of desiccated coconut over the period under review. The satisfactory upward trend in prices could be coupled with the increasing demand in international markets and exports, particularly of the Philippines. It may thus be observed that the world market is becoming a promising place for the desiccated coconut trade while local conditions are not satisfactorily geared to meet the world demand and tap fully the available resources.

By the beginning of this year trade circles felt strongly that Sri Lanka's export trade in desiccated coconut, despite the high unit price earned in 1977, had reached a stage requiring immediate action to ensure its survival. Until about 1969 Sri Lanka exported almost the same volume of desiccated coconut as the Philippines, but thereafter this declined and in 1977 Sri Lanka's exports were only about 30 per cent of those of the Philippines, and her total earnings were 40 percent lower compared to the Philippines. The trade was of the view that as long as Sri Lanka remains a marginal supplier, merely to bridge the gap between international demand and supply, a high unit price is assured for her produce. But the Philippines and other newly emerging suppliers will before long increase their supply to wipe out the gap between demand and supply and there will be no need for marginal suppliers to participate in the trade.

One solution to meeting the increasing demand and maximising our foreign exchange earnings in what would turn out to be a very competitive market is to launch a programme for steadily increasing nut production over the years to come and feeding the desiccated coconut mills with more industrial grade coconuts. An increase in production within the limited resources available would be possible only by means of intensive cultivation with a high yielding variety of coconuts.

Table VII FOREIGN EXCHANGE CONTRIBUTIONS FROM DESICCATED COCONUT EXPORTS

Year	1965	66	67	68	69	70	71	72	73	74	75	76	77
% of country's total export earnings	4	4	4	8	5	5	5	4	4	7	5	4	5