# COCONUT BASED PROCESSING INDUSTRIES IN MATARA DISTRICT AND THEIR POTENTIAL

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PLANNING

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# THE PRODUCTION AND USE OF COCONUT AND COCONUT PRODUCTS IN THE DISTRICT

## 1.1. *INTRODUCTION*

Matara offers an optimum range of agroclimatic indices demanded by the coconut palm, Most of the land area under coconut in the district get a well distributed rainfall of over 60 inches per annum. The red-yellow podsols group is the soil type found in the coconut growing area.

A sample survey conducted in the district during the latter part of 1978[1] revealed that nearly 64% of the total palm population belonged to the age group of 30-60 years. This age group reflects the peak productive phase of the palm, whose age averages around 50 years in the district. The advantageous agroclimatic conditions or the existence of a large number of palms in the peak productive phase have not resulted in a favourable yield per acre and per palm.

The total area under coconut in the district is estimated to be 44,000 acres of which 8,000 acres are well managed. The ill-nourished stand of the palms in 11,000 acres reflect the poor management of the crop. Coconut is also grown in home-gardens in an estimated extent of some 25,000 acres.[2]

## 1.2. The nut production in the district

The nut production in the district is estimated to be around 72.6 million. With a per capita consumption of 135 nut equivalents per year, as extrapolated from socio-economic survey conducted in 1969-70 by the Department of Census and Statistics, some 87 million nuts are required for consumption purposes in Matara, for a population of 645,000 for the year 1983.[3] Of this consumption, 63 million are used as

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1) De Silva et.al 1978

2) Jinadasa 1980

3) Population Census 1981

fresh nuts and 24 million in the form of oil.

Table 1.1. Utilization of Coconut Production in the Matara District

| | (x million nuts) | % |
|---|---|---|
| Home consumption by producers | 9.0 | 12 |
| Sold for fresh nut consumption | 53.0 | 73 |
| For copra industry | 10.6 | 15 |
| Total | 72.6 | 100 |

Table 1.2. Utilization flow of marketable surplus of fresh nuts

| | (x million nuts) | % |
|---|---|---|
| Direct to consumers or village boutiques | 10.6 | 17 |
| Wholesale dealer | 42.4 | 66 |
| Co-operatives | - | -* |
| Copra production | 10.6 | 17 |
| Total | 63.6 | 100 |

* less than 5%

Source: De Silva et.al. 1978

## 1.3. Coconut Oil Production

Four oil mills in the district operating at 75% capacity yielded an output of 12,000 metric tons of oil in 1979. Of this production 3,000 metric tons were utilized within the district itself for consumption purposes. On an average around 1,000 metric tons of oil are used in the manufacture of soap. The surplus output is dispatched to such other districts as Badulla, Ampara and Moneragala.

Table 1.3. The coconut oil production

| | Oil (x 1000 m.t.) | Copra equivalent (x 1000 m.t.) | Nut equivalent x million nuts |
|---|---|---|---|
| Production within the district | 1.3 | 1.6 | 10.6 |
| Brought from outside the district | 10.7 | 12.7 | 85.4 |
| Total resources | 12.0 | 14.3 | 96.0 |

It should be noted that the district does not get down oil directly from outside, but in the form of copra. The nut equivalent of this amount of copra is 85,4 million which exceed the production of the district indicating the potential of the area in coconut processing industries and the supply of coconut oil.

1,4. Other Auxilliary Products

1,4.1. Husks and Shells

Every coconut yields one husk. The total number of husks from the nuts consumed in the district corresponds to the total nut production of 72,6 million. No fresh nuts are brought from outside and the total availability of husks depends on the production of nuts. The different uses of husks are detailed in table 1,4.

| Table 1,4. Use of Husks | (x million) | % |
|---|---|---|
| Total resources | 72,6 | |
| For fuel (from home consumed nuts) | 9,0 | 12 |
| White fibre production | 8,5 | 11 |
| Brown fibre production | 9,5 | 13 |
| Moisture conservation | 0,7 | 1 |
| Waste | 44,9 | 63 |

96 percent of the shells from the nuts consumed in the district too are used as a popular domestic source of fuel. Only a negligible quantity is used in the production of coconut charcoal.

1,4.2. The Palm

As in other parts of the island, the palms of the felled coconut trees are not used for any productive purpose in Matara. The sawn soft wood timber has replaced the coconut palm wood particularly as beams and rafters in the roof structure of the houses. Over 64 percent of the palm wood are sold for firewood, and only about 20% are used as timber. The handicraft industry absorbs about 15 percent and the balance is utilized for such other purposes as fence posts.

### 1.4.3. Fibre Production

18.5 million husks are used for producing white and brown fibre; ten fibre mills in the district account for the total turnout of brown fibre which absorbs 9.5 million husks. The balance (8.5 million husks) is used in making white fibre. The white fibre production which prevails in the district as a cottage industry has not developed to the extent of adopting advanced technology.

### 1.4.4. The Supply of Husks

The white and the brown fibre industry in the district gets its quota of husks mainly from dealers, former supplying more of the green husks. The availability of husks is dependent on the prevailing prices of fresh nuts. When there is a favourable price trend, a great portion of the nuts purchased by the wholesale dealer is sold for home consumption. These nuts are generally dehusked when they are green and the husks retain sufficient moisture. These are the husks that go into the white fibre production. When prices are not so favourable, most of the wholesale dealers who own copra kilns store the green nuts for converting into copra later. This storage process invariably makes the husks dry making them suitable for brown fibre extraction. On an average, the wholesale dealer and the coconut grower supply 30% of the husks for white fibre.

CHAPTER TWO

## MARKETING CHANNELS OF COCONUTS AND COCONUT PRODUCTS

### 2.1. INTRODUCTION

In so far as the district of Matara is concerned, the main coconut products that enter the market are indicated below in Table 2.1.

Table 2.1. Coconut Products and the end uses

| Product | | End uses |
|---|---|---|
| 1. | Fresh coconuts | domestic consumption as food, nuts and copra production |
| 2. | Copra | Coconut oil and poonac (Copra Meal) |
| 3. | Coconut Oil | Domestic consumption, manufacture of soap and margarine |
| 4. | Poonac | animal feed or as an ingredient in formulating animal feed mixtures |
| 5. | Coconut Shells | charcoal production, domestic fuel sources as receptacles in rubber latex collection |
| 6. | Coconut Shell charcoal | water boilers in village tea boutiques, fuel source for minor metal works |
| 7. | Coconut husks - brown | to fibre mills for mill (brown) fibre production, burial in coconut estates, fuel in households, bakeries and kilns |
| 8. | Coconut husks - green | to white fibre production |
| 9. | Brown fibre | to exports as bristle fibre, mattress fibre, twisted fibre and the production of brown fibre yarn and local mattress & upholstery industries & coir goods |
| 10. | White fibre | to white fibre yarn production |
| 11. | White fibre yarn | exported as yarn, manufacture of coir goods and domestic consumption as yarn |
| 12. | Coir goods | exports and local consumption |
| 13. | Coconut honey (treacle) | domestic consumption in sweet meats and in production of jaggery |
| 14. | Coconut timber | making of rafters for domestic householding trade and fuel kilns and household, fence posts etc. |

Two of the coconut based industries, desiccated coconut industry and the toddy tapping industry are not found in the Matara district. The desiccated coconut manufacture is confined to the 'Coconut Triangle' of the island, while toddy tapping is done in certain areas of the Kalutara and Puttalam districts. A limited quantity of palms are tapped for 'sweet toddy' in Matara for the manufacture of coconut treacle.

This chapter deals with the marketing and the pricing aspects of the coconuts and its allied products in the Matara district.

## 2.2. Marketing Channels

### 2.2.1. Marketing of fresh coconuts

As discussed elsewhere in the report, the fresh coconuts in the district are mainly used for home consumption and copra production. The wholesale dealer purchases coconut generally to meet both these demands. As highlighted by De Silva et,al, 1978, the wholesaler deals with 66% of the nuts in the district (Tab,e 2,2,)

Table 2,2, Percent of fresh nuts sold in 1977 by outlets

| Size class of holding - acres | Direct to consumer | Village shop | Wholesale dealer | Co-op | Mill | Other | Total |
|---|---|---|---|---|---|---|---|
| .50 - .99 | 9 | 52 | 36 | * | - | 3 | 100 |
| 1.0 - 2.9 | 7 | 21 | 64 | - | 6 | 2 | 100 |
| 3.0 - 9.9 | 3 | 6 | 78 | - | 10 | 2 | 100 |
| 10.0 - 19.9 | 4 | 11 | 64 | 1 | 21 | - | 100 |
| 20.0 - 50.0 | - | - | 58 | - | 33 | 9 | 100 |
| Over 50 | 3 | - | 97 | - | - | - | 100 |
| Average | 6 | 17 | 66 | - | 9 | 2 | 100 |

Source: De Silva et,al. 1978, Table A61 * Less than 0.5 percent.

It is seen from the above that larger the size of holding more prominent becomes the role of the wholesale dealer. The data given by

De Silva et.al. (1978) needs re-interpretation in the light of the prevailing conditions in the district. The above data indicates that 9% of the crop as being sold to mills. However, there are no desiccated coconut mills in the Matara district or in the adjacent Hambantota or Galle district. The only desiccated coconut mill in close proximity is the one located in Kalutara. But coconuts from Matara district are not transported to Kalutara. Hence the term 'mills' as indicated by De Silva et.al. (1978) could very possibly be a misnomer and should be read as copra kilns/copra producers.

Observations reveal that it is very rarely that a copra producer restricts his sphere of activity to copra production only. The nuts he collects are converted into copra, only if prices for copra and by-products are favourable when compared with prices of fresh nuts, sold for domestic consumption. Nuts of inferior quality are quite often converted into copra. Viewed in this light the share of the total crop that passes through wholesaler/copra producers amounts to 75%. The nuts sold to the wholesaler, ultimately reach the consumer through retail shops. In times of a good crop when there is a surplus over the demand in the district a small proportion of fresh nuts is transported to areas outside the district.

The wholesaler usually has his fixed clientele from whom he purchases his nuts. At the village level, he provides credit to his clients in times of financial distress. He also gives advances against his purchases. The system works both ways. Where cash is not urgently required by the coconut producer, the wholesaler may delay payments, until he disposes the nuts. In case of estates owned by the Government, the nuts are sold on tender basis.

## 2.3. Production & Marketing of Copra

The household requirement of coconut oil in the district is estimated to be 3,000 metric tons, the nut equivalent of which amounts to 24 million. The four coconut oil mills have an annual turnout of 12,000 metric tons which imply the crushing of 96 million nuts. The average production of about 70 million nuts falls short of the demand for consumption and oil production leading to a situation where virtually 90% of the requirements of copra are met with supplies from the other district of Hambantota, Galle and Colombo. It is thus obvious that the possibilities of producing copra on a wider scale in the Matara district would entirely depend on imported nuts which would warrant location of new industries in the producing areas.

The coconut crop shows marked seasonal variations. May/June pick is the highest crop. But the households consumption of coconut is hardly influenced by these variables. In general, the demand for coconuts in household use remains inelastic, being an essential ingredient in the preparation of the daily diet. The consumption of coconut oil is generally higher during April and May, when the traditional festive season is followed by the religious vesak festival.

Usually the coconut crop is harvested once in two months. The crop is compared with the household consumption below:

Table 2.3. Coconut Crop compared with the Household Consumption

| | Jan. Feb. | March April | May June | July Aug. | Sep. Oct. | Nov. Dec. | Total |
|---|---|---|---|---|---|---|---|
| % of production | 13 | 16 | 21 | 20 | 16 | 14 | 100 |
| Coconut crop million nuts | 9.4 | 11.7 | 15.2 | 14.5 | 11.7 | 10.1 | 72.6 |
| Household consumption on food | 10.33 | 10.33 | 10.33 | 10.33 | 10.33 | 10.33 | 62 |
| Surplus | -0.93 | +1.37 | +4.07 | +4.17 | +1.37 | -0.23 | +10.6 |

It is seen from the above table that the district experiences a short-fall in production in relation to the demand in the first and the last two months of the year. If the total surplus is utilised for copra production, about 1600 tons of copra could be manufactured.

## 2.4. Marketing of Coconut Oil

Coconut is not directly sold from the mill to the consumers. Oil is transported to wholesale oil dealers in bowsers of about four to five ton capacity and is unloaded into 45 gallon-capacity drums at the wholesalers. Some wholesale traders purchase their oil at the mill in these drums. After meeting the needs in the district for consumption and manufacture of soap, about 8,000 metric tons of oil are left for despatch to other areas like Badulla, Moneragala, Amparai and Polonnaruwa.

Poonac is a by-product of the oil milling industry, the export of which has been banned by the Government since 1965. On the average, about 1.6 tons of copra yields one ton of oil and about half a ton of poonac. The poonac is sold in bulk by the oil millers to wholesale dealers in animal feed or to retailers as a straight feed or to the firms engaged in concentrated feed production.

## 2.5. Marketing Channels - Coconut Husks

The coconut husks have three main uses, viz:

* as a source of fibre.
* as a source of fuel in households, bakeries and kilns.
* as a source of soil and moisture conservation material in coconut estates.

It has been estimated that the total fibre production absorbs about 24% of the husks the coconuts yield in the district. The surplus over and above needs of the fibre production is used as fuel or conservation material, but the major portion goes to waste. (See table 1.4.)

The marketing channels of green husks are more intricate than those of the brown husk supply, since the white fibre production involves the retting of the green husks for over periods of six months. The husks have to pass through retting pit owners before they reach the fibre producers. The survey on coir products, 1976 states the percentage of husks obtained by those who are engaged in retting as follows:

Table 2.4. Source of Husks

| Source of Husks | Percentage of husks obtained |
|---|---|
| From own lands | 22.9 |
| From carters | 18.6 |
| From estates | 13.8 |
| From copra producers/wholesalers of nuts | 31.9 |
| Mixed | 12.8 |
| | 100.0 |

Source: U.V.H. Perera et.al. 1976

The own lands in this case refer to the coconut holdings owned by retting pit owners and the small holdings and the homestead gardens belonging to the small fibre producers. The carters usually collect the green husks within a radius of about one mile and sell them to the retting pit owners. The large retting pit owners obtain their husks supply from the copra producers who do not adopt the seasoning process and from wholesalers and estates.

Unlike in the case of brown husks the suppliers of green husks experience shortages during the lean season extending from November to February. The trade channels involved in the supply of retted husks/ white fibre could be classified as follows:

* Large retting pit owners who limit their activities to the supply of retted husks.
* Large retting pit owners who supply retted husks as well as fibre.
* Small fibre producers who have their own retting pits.
* Small fibre producers who make fibre from purchased retted husks.
* Yarn spinners who have their own retting pits.
* Yarn spinners who operate on purchased fibre.

The majority of the fibre producers have their own retting pits. But their own supply of retted husks is not sufficient and they have to depend on the retting pit owners to supplement their fibre requirements. On the average a fibre producer owns about three pits with an average intake capacity of 1000 husks.'

The retted husks are sold in segment pieces (usually one nut husk is broken into five segments) and the carters take the retted husks to fibre producers. Some retting pit owners lease the pits to traders, who in turn supply the retted husks to fibre producers. The retted husk supply position is detailed in the table below:

Table 2.5.

| Husks capacity per time | % of owners | % of pits | Estimated annual capacity | % of husks capacity |
|---|---|---|---|---|
| Upto 400 | 20.09 | 9.99 | 34,000 | 0.40 |
| 400 to 1,000 | 50.00 | 33.84 | 439,000 | 5.18 |
| 1,000 to 5,000 | 16.17 | 15.38 | 559,000 | 6.59 |
| 5,000 to 10,000 | 10.78 | 15.69 | 2,025,000 | 23.87 |
| 10,000 to 20,000 | 2.96 | 25.10 | 5,425,000 | 63.96 |
| | 100.00 | 100.0 | 8,482,000 | 100.00 |

Sources: U.V.H. Perera et.al. 1976

Industrial Development Board of Ceylon, 1971.

The above distribution shows the disproportionate ownership pattern of the retting pits. Although 70% of the producers own small retting pits with an intake capacity upto 1,000 husks, the supply from this category accounts only for 5.6% of the total retted husk supply. Nearly 88% of the retted husk supply is accounted by about 14% of the owners. This clearly shows the dominant role played by the large retting pit owners.

## 2.6. Marketing of Fibre

The ten fibre mills in the District produce about 1,160 metric tons of brown fibre. The fibre is directly sold to the shippers. Nearly

95% of the brown fibre produced in Sri Lanka is exported and hence the effective marketing outlet for the mill fibre is the shipper. As for white fibre the situation differs since it is only an intermediate product which is further processed locally. The white fibre is usually purchased by the yarn spinners.

Although some of the yarn spinners have their own sources of fibre, the supply is not sufficient for their needs. U.V.H. Perera et.al. (1976) estimate that the majority of the cottage industrial units (73.42%) are those engaged in fibre either by purchasing the fibre or retted husks from the retting pit owners.

The retting pit owners, employ husk beaters either on commission basis or daily paid basis for the production of fibre. The retted husks are beaten manually, particularly by women folk. In spite of the time consuming routine and cumbersome nature of the process this activity has helped a large number of people to eke out a subsistence. A woman can extract fibre from about 500 husks segments (100 to 125 full husks) a day, which works out to 30 to 35 lbs of fibre.

## 2.7. Marketing of Yarn and White Fibre Products

The yarn is purchased by village traders as well as by some retting pit owners. The private dealers are responsible for the purchase of nearly 80% of the yarn production in the District. The Department of Small Industries has organized producer co-operatives for the purchase of yarn and the supply of fibre to the yarn spinners. The Department has done pioneering work in this field by the establishment of these co-operatives to handle marketing, establishment of training centres and retting centres. The coir yarn purchased by the co-operatives are sold to the department for the production of coir goods. But these co-operatives have not been successful in eliminating the middle men from the scene. The private traders supply yarn to the exporters as well as to the local markets in other districts.

A considerable amount of white fibre yarn is locally used in the production of fibre goods and other local end uses. Only about 2,500 tons of yarn are exported annually. (information of the CAA marketing Division).

## 2.8. Coconut Treacle

Coconut treacle is made from 'sweet toddy' of the coconut palm. It is a product which is locally used in the preparation of sweet meats and in the production of jaggery. Treacle is usually sold at village shops. The bottled treacle is also produced and distributed by the Harischandra Oil Mills in Matara.

# *CHAPTER THREE*

## COCONUT AND ALLIED PRODUCTS - THE PRICING STRUCTURE

### *3.1. INTRODUCTION*

The prices of coconut and its allied products in the district could not be meaningfully examined isolating the general pricing structure for coconut products prevailing in the country. With respect to the coconuts and coconut kernal products (copra, coconut oil and desiccated coconut) the fiscal policy of the Government dictates the limits within which market forces and other regional factors operate in determining the prices.

### 3.2. General Pricing Structures of Coconut and Kernal Products

About 60% of the coconut crop in Sri Lanka is utilized for domestic consumption as food nuts and coconut oil, and the balance is exported in the form of desiccated coconut and coconut oil. The export of commercial grade copra is not allowed. Coconut oil is exported only when there is a surplus over the local needs. However, every action is taken to maintain an uninterrupted export of desiccated coconut, for it is the highest foreign exchange earner among the coconut products.

The export prices of kernal products have no direct relation to the internal market prices of such products. The local prices receivable by the exporters of desiccated coconut and coconut oil are fixed by the Government. Similarly the local prices receivable by the millers too are fixed. These prices have been determined taking into account the costs and margins of shippers and the income earned from by-products such as coconut shells and poonac. The difference between the f.o.b. export price and the Export Cost Price (price receivable by the shipper) is absorbed by the Customs Duty. Since the price receivable by the millers is fixed, the price that oil millers can pay for copra or the desiccated coconut is also fixed within certain limits. Similarly the price the copra producer can pay for coconuts is also to a considerable extent determined by the price he receives for copra from the oil millers. The same situation applies to coconut oil as well.

The scheme has been worked out in order to ensure a fair price to the producer and to make coconuts available in the domestic market at a reasonable cost for the local consumer. The price for coconut under this situation is always balanced with the interests of the consumer and the producer. In mid 1980, when this survey was conducted, the wholesale price for 1,000 coconuts payable to the coconut grower was maintained at Rs. 1,000/-. The local prices for other kernal products declared under this scheme were:

Copra - Rs.5,205/- per metric ton
Coconut oil - Rs. 8,750/- per metric ton
Desiccated coconut - Rs.7,600/- per metric ton

The retail price of a bottle of coconut oil was around Rs.6.50 to 7.00. The retail price of coconut oil is generally maintained within this price range by the Coconut Development Authority, by releasing coconut oil from buffer stocks to the Colombo Wholesale oil traders who are responsible for the distribution of nearly 50% of the coconut oil requirements for household consumption.

### 3.3. General Pricing Structure for Non-kernal Products

There is no similar pricing scheme for the non kernal products. In the case of kernal products, since the surplus above the export cost is absorbed as customs duty the local market prices are cushioned against fluctuations in the world market prices. An ad valorem duty of 5% is charged on fibre and fibre products. The shell products are exported duty free. The shippers and the millers are not paid fixed prices irrespective of variations in the world market prices. Hence the world market prices greatly influence local market prices in the case of the above products. However, in the case of fibre, the Coconut Development Authority, indicates to the millers the minimum prices payable by the shippers. These indicative prices are declared taking into consideration the local market prices and the cost of production of fibre millers. No such minimum price is yet declared in the case of white fibre yarn. The prices of certain by-products such as poonac, which is not exported, are purely determined by the operation of the supply and demand mechanism.

## 3.4. Factors responsible for price variations of coconut products in the local market

It is relevant to study here the major factors which are responsible in determining the price levels in the local market. We have seen the peripheral nature of the influence, the world market fluctuations exert in the case of kernal products. The main factors that influence the local price levels are indicated below:

| Product | Main influencing factors |
|---|---|
| Kernal products | Prices dictated by the fiscal policy of the Govt. buffer stock policy for coconut oil, quality levels, relationship among the kernal products, price relationship between the kernal product and the by-product, marketing channels available, seasonal variations in supply, size of holdings, organisational structure of the producers, and the accessibility to the markets. |
| Exportable by-products | World market prices, quality levels, seasonal variations in supply, marketing channels, organisational structure of the producers, accessibility to the markets and prices of the kernal product. |
| Non-exportable by-products | Local supply and demand forces. |

Such factors as the fiscal policy of the Government and the buffer stock scheme for coconut oil separately and collectively influence the price levels. The study of the effect of all these factors, in quantitative terms, on the price levels, requires an intricate econometric analysis which is beyond the scope of this report. However, the effects of some of the important factors are examined briefly to illustrate the prevailing price levels in the district.

The price of Rs. 1,000/- for 1000 coconuts is the price fixed for nuts of a standard quality. It does not necessarily follow, that any type of coconut irrespective of its size or kernal weight should receive the same price. On the average, the relationship between the coconuts and the kernal products are as follows:

* 4925 coconuts can produce one metric ton of copra (and will leave an equivalent amount of husks and about 2500 shells as by-products)
* 8000 coconuts or 1.625 metric tons of copra yield one metric ton of coconut oil (and will yield half a metric ton of poonac as by-products).

These conversion figures (called out-turn in coconut parlance) are mere averages and are subject to seasonal and regional variations. Poor quality nuts of low weight will require more than the standard quantity for the production of copra and oil. The price will be correspondingly lower than Rs. 1,000/-, for such low quality coconuts similarly, low quality copra with a higher moisture content will receive correspondingly lower prices from the oil millers.

The conversion figures given above explain the relationship that exist between the kernal product and the corresponding by-products. For example, the prices of coconut shell charcoal are mainly influenced by the world market prices. When the price of charcoal rises, there will of course be a rise in the coconut shell prices. This would mean that a copra producer will be able to get a better return for his surplus shells. Because of his higher profit margin, he may be able to pass a portion of these benefits to the coconut producers, especially if there is severe competition to purchase nuts during scarce times. His margins will still be higher, if he could dispose his brown husks to fibre millers at higher prices. Similarly at times of high poonac prices in the local market, especially during the lean seasons, the margins of oil millers will be correspondingly high, with the result that they may be able to pass part of the benefits to copra producers and so on down the line to the nut producer. More often than not, such benefits are accrued by the producer specially during the lean seasons of the year, ranging from November to February when there is intensive competition for coconuts.

The scarcity of coconuts, reinforced by the factors discussed above makes the prices spiral upward during this period. Thus the wholesale prices may rise over and above the declared price by the Coconut Development Authority. The converse applies in the seasons of surplus. The demand for coconut oil for domestic uses will rise during April/ May. However, the increasing production starting from March and the stock releasing policy keeps the retail price of oil within limits.

## 3.5. Regional factors that influence the price aspects

In addition to the above general factors that affect the prices, other factors of a regional nature operate within the district, which have a relevance to the pricing structure. They are:

* The presence of a large number of small holdings
* Lack of organisation among the producers
* Marketing channels
* Distance from the markets and tranport problems
* The social relationship between the buyer and the seller

The prices received by the small holders are generally less than the prices received by estate owners. The small holders lack the bargaining strength. A wholesaler will have to collect the marketable surplus of several holdings in order to build up an economic load. Hence, the additional expenses involved in the collection invariably results in lower prices being paid to the small holder. If these holdings are situated away from the main markets, and where transport is difficult, then the price receivable by them is still less. The small holders in the interior of the district are affected adversely because of the operating influence of these factors. The social relationship between the buyer and the seller is also a factor to be reckoned in pricing. The buyer at village level is quite often a person who provides multiple economic services. He is a source of credit in times of financial distress and the small holder is obliged to sell his product at a price determined at the discretion of the trader.

The presence of middlemen, and the absence of producer organisations, especially in the case of white fibre industry are factors militating against producer receiving a fair price for their products.

## 3.6. Prevailing prices in the district

### 3.6.1. Coconuts

During the first quarter of 1980, the wholesale prices of coconuts ranged from about Rs.800/- to Rs.1,250/- per thousand taking the district as a whole. This represents a variation of 10% to 25% around the declared wholesale price of Rs.1,000/-. It should be noted that the first quarter is a part of the lean season. Taking the country as a whole, the January/February crop was also about 10% less in 1980, when compared with the corresponding crop of the previous year. The price differences among the regions seem to be less marked than the differences marked between prices received by the big estates and the small holders. The prices received by the small holders were about Rs.100/- less than those received by the estates per 1000 nuts. The retail prices of coconuts ranged from Rs.1/30 to Rs.1/60 per nut.

Coconuts are sold either with or without husk. The copra producers require unhusked nuts in order to season the nuts. In the interior of the district where husks are not in demand for fibre production, prices paid for unhusked nuts are less than those paid for husked nuts. It is more economic to transport husked nuts, since more than double the quantity of husked nuts can be transported in the vehicle. The husking charges in the district ranged from Rs.20/- to 30/- per 1000 nuts.

3.6.2. Copra, coconut oil, poonac, shells and charcoal

The wholesale prices of copra payable by the millers to copra dealers per metric ton averaged as follows depending on quality levels:

No.1 - Rs.5,320/-
No.2 - Rs.4,530/-
No.3 - Rs.3,740/-

The prices receivable by the copra producers from the dealers are around Rs.150/- to Rs.200/- less per metric ton than the millers price. The prices for copra for the country as a whole ranged from Rs.5,200/- to Rs.5,600/- per metric ton for No.1 quality. The price of copra, corresponding to the declared price of Rs.1,000/- per 1000 nuts is Rs.5,205/- per metric ton. The price of copra for the first quarter shows a positive variation up to about 8% from the justifiable price.

The wholesale price of coconut oil ranged from Rs.8,550/- to Rs.8,750/- per metric ton and the declared price of coconut oil was maintained at Rs.8,750/-, whereas both coconuts and copra had recorded positive variations from the declared price, the coconut oil recorded negative variations up to about 3% from the declared price. At a time when both the copra market and the fresh nut market were favourable it is worth finding out why coconut oil recorded negative variations. This was due to the inordinate rise in the poonac prices in the local market. The price of poonac rose from 1,250/- to Rs.2,700/- per metric ton. With the millers income recording an increase from poonac sales, it was possible for them to reduce the oil price and pay higher prices for copra. This demonstrates the relationship between the price of by-products and the kernal product. The retail price of oil was maintained around Rs.7/- per bottle. Matara District is responsible for supplying about 20% of the household oil consumption needs in the country.

Another by-product which recorded unprecedented increases was the coconut shell charcoal. The price of charcoal per metric ton rose from Rs.2,165/- at the beginning of the quarter to Rs.2,700/- at the end of the quarter. The prices of coconut shells in the district ranged from Rs.80/- to 120/- per thousand shells. These are unprecedented prices for coconut shells. About 20,000 shells are required to produce one metric ton of charcoal. Thus the shell value per ton of charcoal ranged from Rs.1,600/- to Rs.2,400/-. The copra shells in the Matara District were purchased by the charcoal producers in the neighbouring Hambantota District on coconut products. Hambantota supplies copra to Matara and purchase shells and coconut oil from Matara.

3.7. Prices of coconut husks, fibre and fibre products

3.7.1. Husks

The contrast to the other coconut products, the prices of husks vary considerably within the regions in the district. These price differentials are associated with the end uses of the husk, and the availability of markets in proximity to the source of supply. In the first place, a considerable price difference exists between the brown husks in the areas where white fibre production is predominant. However, in the interior of the district, from where it is difficult and expensive to transport husks to areas of fibre production, both green and brown husks are available very cheaply. Thus the price of husks is dependant on the availability of husks and the regional distribution of the fibre industry. The time constraints of five days within which green husks have to be brought from the tree to the retting pit, makes it impossible for white fibre producers to get their supply of green husks from the interior of the country. In the case of white fibre production, the green husks have to pass through the long retting period exceeding six months, in contrast to the retting process of about one month involved in brown fibre production. The retted green husks are about three times expensive as the green husks.

Both the brown fibre production and the white fibre production is concentrated along the coast line area of the district. About 69% of the white fibre producers and 20% of the brown fibre mills are concentrated in AGA divisions of Wellaboda Pattu West and Four Gravets and the Wellaboda Pattu East. 31% of the white fibre producers and 80% of the fibre mills are concentrated in the A.G.A. division of Weligam Korale West. The green husk supply area extends to about four miles inland from the coast and the brown husk supply area extends to about 10 miles further inland. The husks in Kandaboda Pattu and Morawak Korale AGA divisions are not utilised in fibre production. The following table summarises the prices of husks in the district during the first quarter of 1980.

| AREA: | PRICES OF 1000 HUSKS | | |
|---|---|---|---|
| | BROWN | GREEN: | RETTED: |
| | RS | RS | RS |
| (1) Wellaboda Pattu & Matara & Devinuwara town council area. | 35/= - 50/- | 80/= - 120/- | 250/= - 300/- |
| (2) Weligama Korale West and the Weligama Town Council area. | 40/= - 60/- | 90/= - 125/- | 250/= - 400/- |
| (3) Kandaboda Pattu | 10/= - 15/- | Not Used | Not used |
| (4) Morawak Korale | Not Used | Not Used | Not used |

The above table shows that in areas where husks are utilized in fibre production, the prices of brown husks range from Rs.35/= to Rs.60/=, green husks Rs.80/= to Rs.125/=, and the retted husks Rs.250/= to Rs.400/= per 1000 husks. Only an insignificant proportion of the husks in Kandaboda Pattu is utilized in fibre production and none at Morawak Korale.

A small proportion of green husks from the Beliatta area in the Hambantota district are also obtained by white fibre producers, during scarcity periods, since the husk supply seasonally varies with the nut production.

### 3.7.2 PRICES OF FIBRE

The first quarter of 1980 was a very favourable period for the prices of brown fibre. The fibre millers in Matara sell their fibre to shippers in Galle district. The millers received Rs.78/= per number one quality mattress fibre and Rs.70/= per number two quality mattress fibre, for 50 kilograms. The declared minimum prices of the Coconut Development Authority, payable by shippers to millers, delivered at Colombo were as follows:

Mattress fibre No: 1 - Rs. 90/= to Rs.105/= per 50 Kg.
Mattress fibre No: 2 - Rs. 85/= to Rs. 95/= per 50 Kg.
Bristle fibre one tie - Rs.110/= to Rs.140/= per 50 Kg.
Bristle fibre two tie - Rs.160/= to Rs.200/= per 50 Kg.
The prices of white fibre in the district averaged about Rs.120/= per 50 kilograms.

### 3.7.3. PRICES OF WHITE FIBRE YARN

The fibre products in the Matara district are made out of white fibre. Yarn is the basic product from which other fibre goods such as rope, carpets, rugs etc., are made. The prices of yarn vary depending on the quality and type of yarn. The hand twisted yarn is more expensive than the machine spinned yarn because of its more even twist. At the retail level, yarn is usually sold in hanks/skeins. It is very difficult to compare prices, because of the different length of hanks and the quality differences. The length of the skeins vary from about 40 feet to 70 feet. On the wholesale level yarn is sold and purchased on weight basis.

The yarn is purchased at guaranteed prices by the Coir Workers co-operative set up by the Department of Small Industries, and by private traders. The private traders are responsible for purchasing about 80% of the production. They purchase yarn at prices ranging from Rs.3/= to Rs.6.60 per kilogram depending on the quality of the yarn.

The average prices receivable by the spinners for machine spun yarn are as follows:

No: 1 - 6.40 per kilogram
No: 2 - 5.95 per kilogram
No: 3 - 5.40 per kilogram
No: 4 - 4.95 per kilogram
No: 5 - 4.40 per kilogram

The hand spun yarn is on the average about one rupee more per kilogram than the machine-spun yarn. The retail price of yarn in the district is about Rs.2/= to Rs.3/= more than the price paid to the yarn spinners.

The pricing structure of yarn is left much to be desired. The prices paid by the private traders many at times of scarcity be even higher than those paid by the Co-operative Societies. Because of the absence of uniform standards and effective producer organizations, the private traders are able to manipulate the prices to their advantage. However, the presence of the Coir Workers' Co-operatives, though they are responsible for only a minor share of the market, prevents the prices being unduly depressed, in areas where such co-operatives are in operation.

# CHAPTER FOUR

## 4. PROBLEMS OF PROCESSING INDUSTRIES

### 4.1. INTRODUCTION

The problems associated with the coconut based industries in the district could be classified under two broad categories viz:

* Problems common to a particular industry at a national level.

* Problems specific to the region.

Of the coconut based enterprises, the major industries of the district facing such problems are, coconut oil milling, brown fibre milling and the white fibre production. The problems associated with coconut cultivation are not discussed in detail in this report, apart from passing reference to them in so far as they have a bearing on the processing industries.

## 4.2. PROBLEMS OF THE BROWN FIBRE MILLING

There are about 740 fibre mills in Sri Lanka with an annual production capacity of about 160,000 tons. The total production is around 120,000 tons out of which about 100,000 tons of fibre are exported annually. Nearly 94% of the fibre mills are concentrated in the districts of Gampaha, Kurunegala and Puttalam.

Three main problems facing the brown fibre industry as a whole are:

* The scarcity of machine men
* The presence of dust in the fibre
* Insufficient premium on high quality fibre

The job of machine men is a hazardous task, and skilled machine men are very scarce. The mattress fibre contains about 10 to 15% dust, which adversely affects its competition position vis-a-vis synthetic substitutes. The subsidy scheme to fibre millers operated by the Coconut Development Authority provides for installation of additional clearing equipment. But the millers are reluctant to install these equipment, because the loss in weight in the fibre due to additional cleaning is not sufficiently compensated by the premium paid for such dust free fibre. The problems mentioned above are common to the fibre milling industry in Sri Lanka.

The problems of a regional nature are, the scarcity of husks and the scarcity of water during drought seasons. However, both these problems are more relevant to the fibre mills in the main coconut triangle north of Colombo. The mills in the Matara district are not generally affected by the scarcity of husks or water.

## 4.3. PROBLEMS OF THE OIL MILLING INDUSTRY

There are about 60 oil mills in the Country, with an annual production capacity of about 225,000 tons, of which only about 50% capacity is utilized because the nut production falls short of the demand. In the case of brown fibre milling, the production of fibre in the district is less than one percent of the total brown fibre production in the Country. In contrast, the oil production in the district is about 12% of total production in the Country. Out of the four oils mills in Matara, two can be classed in the category of large mills, Matara is a processing and distribution centre for coconut oil. It is responsible for about 30% of the local distribution of coconut oil. The major problem facing the oil mills in the district is the scarcity of copra, as already shown, the coconut production in the district is not sufficient to feed the oil mills.

## 4.4. PROBLEMS OF THE WHITE FIBRE INDUSTRY

The white fibre industry is confined to the Southern Coast line of Sri Lanka and hence the problems associated with the industry are of a regional origin. Unlike the brown fibre milling and oil milling industries, white fibre industry is a cottage industry, having problems peculiar to such industries. It is also a labour intensive industry in the area providing a means of livelihood to a large number of people.

The main problems faced by the industry are summed up below:

1. Absence of effective producer and marketing organizations.

2. Scarcity and the high prices of green husks.

3. Stranglehold or retting pit owners and the high prices of retted husks.

4. Low productivity and the resultant low remunerative earnings.

5. Marketing problems - presence of middlemen, insufficient premiums on high quality yarn and lack of standardisation.

6. Inability on the part of yarn spinners to invest capital for equipment such as spinning machines, cleaning machines and to establish their own retting pits.

7. Scarcity of labour.

8. Difficulties in maintaining a consistent colour in the yarn and fibre produced.

9. Execessive retting time involved which varies from five months to one year.

### 4.4.1. Absence of effective producer and marketing organizations.

A major constraint to the development of the industry is the absence of an effective organization of the producers. The producer co-operatives established by the Department of Small Industries cater only to a small proportion of the producers.

The share of the marketing handled by these co-operatives do not exceed 20% of the production in the district. The presence of strong producer organizations can make a breakthrough particularly in the marketing problems associated with the development of the industry. Such organizations could arrange for the production and marketing on a more rational basis to counterract the exploitation of the producer by the retting pit owners and the middlemen.

### 4.4.2. SCARCITY OF GREEN HUSKS

The surplus husks in the interior of the district could not be utilized in white fibre production, because by the time these husks are brought to the coast, they are no longer suitable for white fibre production. The high prices of green husks, going up to about three times that of the brown husks, is mainly due to the scarcity. U. V. H. Perera et. al. (1976) reveal that about 16% of the fibre producers find it difficult to get husks for want of money.

## 4.4.3. HIGH PRICES OF RETTED HUSKS

The high price of retted husks is the result of an interaction of such factors as the scarcity of husks, control of the supply by the retting pit owners and the longer retting time involved. The price of retted husks is nearly three times that of the green husks. We have already seen that the retted husk supply from pits owned by the spinners and small fibre producers is not sufficient to meet their requirements of fibre. An analysis of the retting pit capacity shows that nearly 88% of the husks are supplied from retting pits with over 5,000 husks capacity, although the number of owners constitute only about 14%. This clearly shows the dominating influence of the retting pit owners on the industry.

However, certain retting pit owners engage in the supply of fibre and the purchase of yarn, so that their influence is felt at both ends - viz supply of material and the purchase of yarn. The large retting pit owners have the advantages of the economics of scale in that they can purchase green husks at lower prices and transport them since they have the transport facilities.

As the following calculaton shows, a retting pit owner could earn a margin of over 30% on investment, allowing for interest.

| APPROXIMATE COST OF RETTING 1000 HUSKS: | RS. |
|---|---|
| * average cost of husks at site | 100 |
| * cost of establishment and maintenance | 85 |
| * wastage of husks - 20% | 20 |
| * interest on capital at 20% | 37 |
| | 242 |
| average price of 1000 husks | 325 |

4.4.4. LOW PRODUCTIVITY AND LOW REMUNERATION

The yarn is spun both manually and mechanically. U.V.H. Perera et. al. (1976) reveal that about 52% of the yarn spinners are engaged in hand spinning and 35% engaged in the use of hand operated spinning machines whereas the rest adopt both methods. The present spinning machine which requires two skilled workers and one additional hand to turn the wheel has a capacity of producing 28 pounds of yarn, in 8 hours.

Thus the productivity per unit at 2 1/2 units of man power per machine, works out to 11.2 pounds of yarn. At a favourable price of Rs.2/= per pound, the total value of production per unit is Rs.22.40. At a commission of 33% to 40% for yarn spinning which is the normal rate for the purpose in the district, the daily earnings work out to Rs.10/= per unit. This figure may vary between Rs.7/= to Rs.12/= depending on the quality of yarn. Comparatively the remuneration is not attractive enough as in other trades.

The white fibre industry is characteristic of the low remuneration received by the actual toilers in the field, the yarn spinner and the husk beaters. The husk beating is done by old women. The manual husk beating for the extraction of fibre is a cumbersome and monotonous task. But it yields better fibre than in mechanical extraction. On the average a woman can beat about 100 to 125 nut husks, a fibre equivalent of about 40 pounds for which her remuneration at 25% commission would be 10 pounds or about Rs.10/= per day.

The remuneration emanates from the low productivity and depends on the margins earned by the retting pit owners and the middlemen. For example, if the yarn spinners have their own sources of fibre, the daily remuneration per worker would increase to about Rs.15/= per day. If the machine efficiency could be increased and with rationalised production and marketing on a community basis, the yarn spinning could be made a very remunerative trade.

### 4.4.5. MARKETING PROBLEMS

The absence of an effective producer organization has given rise to a variety of marketing problems. The poverty ridden producers do not have the bargaining power, viz-a-viz the middlemen engaged in the purchasing of yarn.

The lack of standardisation of the product make them vulnerable to the manipulation of the traders. The premiums paid on high quality yarn is not remunerative enough to encourage improved quality yarn.

### 4.4.6. FINANCIAL INABILITY OF THE PRODUCERS

The existing poverty among the producers and the low income prevent them from injecting more capital for the further development of the industry. The majority of producers are not in a position to invest in hand spinnign machines of willowing machines or in the establishment of their own retting pits. They cannot afford to employ hired labour and expand their activities.

### 4.4.7. SCARCITY OF LABOUR

In certain localities of the district it is difficult to get female labour to attend to beating of husks. The younger generation does not take up this trade, because of the social stigma attached to it. The mechanical extraction of fibre is practised at certain places such as Dickwella.

The yarn spinning industry also works at under-capacity due to the scarcity of labour, in addition to other factors such as scarcity of husks and the non-availability of spinning machines. U. V. H. Perera et. al. (1976) reveal that the spinning wheel is less used since the spinners do not have enough capital to buy them. The difficulty experienced in getting the required labour is yet another factor. The lack of finance affects about 16% of the producers and the labour shortage about 19% of the producers.

The machine needing more labour may appear paradoxical. But it should be noted that the spinning machine requires three hands to operate it. A household with less than three working members, will not be able to operate a spinning machine without employing hired help. This is one reason why the spinning machines are generally under-utilized. However, this is a problem that could be easily overcome by operating the industry on a community basis.

## 4.4.8. TECHNICAL PROBLEMS - EXCESSIVE RETTING TIME AND DIFFICULTIES IN MAINTAINING CONSISTENT COLOUR

The retting time for white fibre ranges from about five months to one year, which is subject to such vairbles as the type of husks, type of water and the nature of retting pits, etc.

About 10 to 20% of the husks have to be rejected due to spoilage. The reduction of retting time will benefit the producers, if sufficient husks are available. An undue reduction of the retting time in the face of the scarcity of green husks may raise the prices of husks, and may lead to the concentration of husk supply in fewer hands.

The Department of Small Industries has planned to establish a retting centre at Denipitiya with the facilities for pre-crushing of husks, and for the mechanical extraction of fibre. The retting time could be reduced to about one month by this process. The proposed retting centre, will be to a considerable extend relieve the coir workers from the stranglehold of the retting pit owners.

The other problem is the difficulty in maintaining a consistent colour in the fibre produced. It varies from white to brown through various shades of grey. The colour of fibre varies with the type of husks, type of water, type of soil and type of retting pits etc.

The industry needs research suport with respect to the improvement in the colour fibre, for improved colour command premium prices.

A considerable quantity of this low quality fibre is absorbed into local consumption. The white fibre is more expensive than the brown fibre. The use of white fibre yarn in such local end uses as agricultural twine could equally well be substituted by the brown fibre yarn, thereby releasing the white finbre for export. It is essential to improve the quality of the yarn in order to achieve this end.

Even at the present technological level of the industry, a considerable increase in the producitivity could be achieved by looking anew at the organizational problems. Except for the technical problems and the scarcity of husksm all the other constraints to develop the industry are of an organizational nature.

# CHAPTER FIVE

## PROPOSALS FOR THE DEVELOPMENT OF THE COCONUT BASED PROCESSING INDUSTRIES IN THE MATARA DISTRICT

### 5.1. INTRODUCTION

The proposals indicated in this chapter are based mainly on the analysis of the coconut based processing industries given in the previous chapters. It was attempted to identify the constraints to the development and to figure out the raw material potentials of the district. The fibre industry (brown and white) was considered as the area where the potentials exist for further development of coconut based industries in the district, and the proposals summed up here are confined to this specific area.

The white fibre industry has its own district organizational structure. The structure most suitable for the development of the industry within the present technological level would be the existing labour intensive cottage industry base, relationalised through the establishment of producer societies. The collection of raw materials, rationalisation of production and the marketng of products, should be conducted by the coir workers who can form themselves into their own spontaneous organizations at the villege level. However, it is not possible or desirable to impose such societies from above.

## 5.2. SUMMARY OF PROPOSALS

The following proposals cover the fields of extension, research financial suport and the development of new industries.

### 5.2.1. EXTENSION

The appointment of two extension officers is recommended to cover the white and brown fibre industry in Matara - one for Weligam Korale and one for Welliboda Pattu. Since most of the constraints to development of the white fibre industry is of an organizational nature, an intensive extension scheme will be an indispensable condition. However, the role of the extension worker should be limited only to that of a " change agent ", allowing the people to achieve the objectives on their own. The demonstration effect of an existing peoples organization, such as the " Self Reliance Movement " of the coir workers at Kamburugamuwa, in the Matara district will ideally suit this purpose.

The envisaged duties of the proposed extension service are indicated below:

* Visit fibre and yarn producers, discuss and study their problems and help where necessary in the formatting of producer societies.

* Listing all the fibre producers, processors, yarn spinners and societies and identifying locations with different grades of fibre and yarn collectng samples.

* Collaborative work with other Departments, Institutions, Boards such as Department of Small Industries, Coconut Developmentn Authority, Coconut Research Board, Industrial Development Board, Export Promotion Board and other private institutions working in this field.

* Organising the adoption of research findings in the field, identifying problems and locatons where additional research work is essential and liason work with respect to research.

* Identification of possible new projects in the area.

* Recommendations on producer societies which need spinning machines, willowing machines and retting pit facilities.

5.2.2 RESEARCH SUPPORT TO WHITE FIBRE INDUSTRY

It is proposed that research be conducted to achieve the following objectve:

* Maintenance of the colour consistency and the improvement to colour.

* Reduction in retting time.

* Improvements to the spinning machine.

* Improvements to the cleaning/willowing machines

* Mechanical beating/extraction.

* Extraction of white fibre from green husks without retting of husks.

### 5.2.3. FINANCIAL SUPPORT TO THE WHITE FIBRE INDUSTRY

* Provision of spinning machines and cleaning/willowing machines at 50% subsidy.

* Financing the establishment of small retting pits of upto 5000 capacity.

### 5.2.4. NEW BORN FIBRE INDUSTRIES

The establishment is proposed of a brown fibre mill of two-drum pair capacity (one million husks per annum) and a brown fibre yarn making unit in the Hakmana electorate.

The Hakmana electorate has been selected as the best location for the proposed fibre mill. The expansion of the white fibre industry in an extensive scale is constrained by the limited availability of green husks, in lean periods. The green husk supply is mainly concentrated in the coastal belt of Weligam Korale West, Wellaboda Pattu West and Four Gravets and the Wellaboda Pattu East. With a more organized and intensive collection of green husks and the import of green husks from the adjacent Hambatota district, it may be possible to increase the production by about 20 % to 30 %.

However, no such limitations exist in the case of brown husk supply. The present sources of brown husk supply extends further into the interior of the above A.G.A. divisions and covers the North and South Weligam Korale and Gangabada Pattu. The husk generated in the Morawak Korale East and West and the Kandaboda Pattu are not utilized for fibre extraction but used as fuel or for moisture conservation or simply allowed to waste away.

At present about 1/3 of the husks in the district is used in fibre production which in turn depends on the economics of husk collection and transport. It is not economic to collect husks from small holdings in the interior. This may explain why the existing 10 fibre mills in the district are also sited along the coast line area of the district. The good roads in the coastal belt, availability of power and the retting facilities favour these mills.

Although nearly 2/3 of the husk supply in the district is not utilised for fibre production, this quantity mainly concentrates in the interior, and in small holdings.

Taking these facts into consideration, the location for the fibre mill is proposed at Hakmana. The capacity suggested is the minimum economical (one million husks per annum). Further, the electorate of Hakmapa is adjacent to the Beliatta area in the Hambantota district the source of husks to the Galle district. Hakmana area also has the highest potential for increasing the coconut production through short term measures.

## 5.3. SUMMARY OF COSTS OF PROJECTS

In certain instances such as research, the costs figured out are very approximate since a realistic estimate is not possible.

The costs do not include the expenses involved in the payment of royalties or the acquisition of patent rights. The details of costs are given in the annexure. The estimated costs in Rupees are summarised below. The phasing of the capital expenditures has to be elaborated.

| | PROJECTS | CAPITAL | ANNUAL OPERATIONAL COSTS |
|---|---|---|---|
| 1. | White fibre development | | |
| | - Extension | 24,000 | 42,000 |
| | - Research | 200,000 | - |
| | - Financial support to the industry | 300.00 | - |
| | | 524.00 | 42,000 |
| 2. | Brown fibre mills & yarn project | 515,000 | - |

## 5.4. SUMMARY OF EXPECTED BENEFITS OF PROJECTS:

The expected annual benefits at full development can be measured in terms of:

1. White fibre development:
   additional income from increased productivity from retting pits and spinning machines Rs.138,000

2. Brown fibre mill yarn plant:
   Profit Rs. 42,000

It should be noted that the annual profit to the Brown Fibre Mill & Yarn Plant is calculated at the local price of Rs.3,800 M/T of yarn. If calculated at the F.O.B. price of Rs.8,065 M/T of yarn, the annual profit would amount to Rs.469,000.

### EMPLOYMENT CREATED

* From 500 spinning machines and 50 cleaning/willowing machines units(Boys treated as half units). 1,300

* Employment direct 99 people.

## 5.5. ORGANIZATION

The possible organizations capable of carrying out the project components are indicated below:

| | | |
|---|---|---|
| * Extension | : | Department of Small Industries<br>Coconut Development Authority. |
| * Research | : | Department of Small Industries<br>Coconut Research Board,<br>Coconut Development Authority,<br>Industrial Development Board. |
| * Financial aid Scheme | : | Coconut Development Authority,<br>Export Promotion Board and the Banks. |
| * Fibre Mill/Yarn Unit | : | Land Reform Commission or private capital or Producer Co-operatives. |

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# ANNEXURE

| | | |
|---|---|---|
| 1. | Cost of Extension Activities | Rs. |
| | Two motor-cycle at Rs.12,000/= each | 24,000 |
| | Annual Expenses | |
| | Renting two office rooms at Rs.150/= p.m. | 3,600 |
| | Salaries of two officers at Rs.800/= plus 15% | 22,080 |
| | Travelling and subsistence - 50% of salary | 11,000 |
| | Identical office expenses | 5,000 |
| | TOTAL | 41,680 |
| 2. | Cost allocations for research | |
| | Maintenance of colour consistency and the improvements of colourrs | 25,000 |
| | Reduction in retting time | 25,000 |
| | Improvements to spinning machine | 50,000 |
| | Improvements to cleaning machine/ willowing machine | 25,000 |
| | Divising a mechanical beater | 50,000 |
| | Extraction of white fibre from green husks without retting of husks | 25,000 |
| | TOTAL | 200,000 |

N.B. (the above costs do not include any payment of royalties or acquiring patents)

3. <u>Financial support to white fibre industry</u>

| | |
|---|---|
| 50 cleaning machines at Rs.4,000/= each | |
| 50% subsidy | 100,000 |
| 500 spinning machines at Rs.400/= | |
| 50% subsidy | 100,000 |
| Refinancing - 200 retting pits of 500 to | |
| 5000 capacity at Rs.500/= | 100,000 |
| TOTAL | 300,000 |

The details have to be worked out subsequently.

4. <u>Cost estimates for a Brown Fibre Mill and Brown Yarn Making Project</u>

<u>Capacity:</u> 2 drum pairs, at 2,500 husks per drum per 200 working days - one million husks per year.

<u>Location:</u> Hakmana electorate

| Capital | Rs. |
|---|---|
| 1. Land-3 acres at Rs.10,000/= per acre | 30,000 |
| **Buildings** | |
| 2. Mill shed and office - 30 x 40' at Rs.75/= sq.ft. | 90,000 |
| 3. Bristle fibre stores - 15 x 10' at Rs.65/= sq.ft. | 9,750* |
| 4. Balloting shed - 15 x 20',at Rs.65/= sq.ft. | 19,000* |
| *FINISHED GOODS ARE TRANSPORTED TO YARN MAKING PROJECTS | |
| 5. Retting tanks - 2 Nos. 15 x 10' at Rs.65/= sq.ft. | 39,000 |
| 6. Water tank for washing fibre - 10 x 10' at Rs.65/= sq.ft. | 6,500 |
| 7. Drying floor for the fibre 20 x 40' x Rs.30/= sq.ft. | 24,000 |
| T O T A L | 188,750 |

Machinery:

| | | |
|---|---|---|
| 8. | 2 pairs of drums at Rs.20,000/= each with 3 HP and 2 HP motors | 40,000 |
| 9. | Husk crusher with 10 HP motor | 50,000 |
| 10. | Paddle sifter | 20,000 |
| 11. | Ordinary sitter | 12,000 |
| 12. | Hand operating balloting machines | 5,000 |
| 13. | Water pump with water | 5,000 |
| 14. | Two wheelbarrows | 1,000 |
| 15 | Installation of machinery | 25,000 |
| 16. | Electrification of the mill | 10,000 |
| 17. | Office equipment | 15,000 |
| 18. | Contingencies 20% of above costs | 80,350 |
| | | 482,100 |

## 4.1 Personnel requirements

| | |
|---|---|
| 1. OIC/Manager - Rs.80/= month plus 15% benefits | 11,040 |
| 2. One clerk - Rs.450/= p.m. plus benefits | 6,210 |
| 3. Four machine operators at Rs.25/= day plus 15% | 23,000 |
| 4. Two male labourers at Rs.15/= day | 6,000 |
| 5. Two female labourers at Rs.10/= day | 4,000 |
| 6. One watcher Rs.350/= p.m. plus 15% benefits | 4,825 |
| | 55,075 |
| Fixed portion (1, 2, 3, 6,) | 45,075 |
| Variable portion (4, 5) | 10,000 |

## 4.2. Working capital estimates

| | |
|---|---|
| 1. One month husks at Rs.40/= per 1000 husks plus transport | 6,000 |
| 2. Cash and contingencies | 10,000 |

4.3 Cost of production - Fibre mill

Variable costs

| | | |
|---|---|---|
| Purchase of husks 1 million husks at Rs.40/= per 1000 husks | | 40,000 |
| Transport of husks - 200 loads at Rs.150/= | | 30,000 |
| Wages and benefits at 15% | | 10,000 |
| Electricity | | 10,000 |
| | | 90,000 |

Fixed costs

| | | |
|---|---|---|
| Salaries and benefits | | 45,000 |
| Repairs and maintenance | | 5,000 |
| Office miscellaneous | | 5,000 |

Depreciation

| | | |
|---|---|---|
| Building and installation - 2 1/2% | 4720 | |
| Machinery and equipment - 25 yrs | 7320 | 12,000 |

Interest

| | | | |
|---|---|---|---|
| Working capital - 16% on 16,000 - 2,560 | | | |
| Fixed capital - 16% on 482,000/- minus | ] | | |
| Rs.25,000/= subsidy on 10 year repayment | ] | 40,216 | 43,000 |
| in equal instalments | | | |
| Total fixed cost | | | 110,000 |
| Total cost | | | 200,000 |
| Cost/MT of mixed fibre | | | 1,600 |

Transfer 125 MT of mixed fibre to yarn making at Rs.1,600/- M/T

## 4.4. Brown Yarn Making Unit

Capacity - 125 tons of brown fibre converted to 100 mt. of yarn, Method of production - machines twisted yarn by distribution of fibre to homes of members of the society, with machines provided and payment at 30% commission.

## 4.4.1. Capital Requirements:

| | |
|---|---|
| Spinning wheels - (at 25 pounds of yarn/ machine per day and 300 working days) | |
| 30 machines at Rs.400/= each | 12,000 |
| Yarn store and office - (Bristle shed in the mill to be used as this will not be engaged) | - |
| Weighing machine and office equipment | 15,000 |
| Contingencies 20% | 6,000 |
| | 33,000 |

## 4.4.2. Working capital

| | |
|---|---|
| 15 days yarn stock at Rs.3,500/= ton | 15,000 |
| 15 days fibre stock at Rs.1,600/= ton | 8,300 |
| One month wages | 1,000 |
| Cash and contingencies | 5,000 |
| | 29,000 |

4.4.3. Cost of production and profitability

| | | |
|---|---|---|
| 125 MT fibre at Rs.1,600/= MT. | | 200,000 |
| Yarn spinning expenses at 30% commission on 100 MT of yarn at 3,800/= M/T | | 114,000 |
| Wages - one labourer at Rs.15/= day for 200 days | | 3,000 |
| Collection of yarn and distribution of fibre by cart | | 5,000 |
| Variable costs | | 322,000 |

Fixed Costs

| | | | |
|---|---|---|---|
| One clerk at Rs.450/= plus 15% benefits | | 6,200 | |
| Depreciation | | | |
| Machinery - 10% | 1,200 | | |
| Equipment - 25 yrs | 600 | | 1,800 |

Interest

| | | | |
|---|---|---|---|
| Working capital - 10% on Rs.29,000/- | = 4,640 | | |
| Fixed capital - 16% on Rs. 3,000/- | | | |
| in 10 years repayment | = 2,904 | 7,550 | |
| Fixed cost | | | 15,550 |
| Total cost | | | 337,550 |
| Scales value of 100 MT of yarn at Rs.3,800/= MT | | | 380,000 |
| Profits | | | 42,000 |

4.4.4. Economic indices

| | | |
|---|---|---|
| Percentage of profit to capital | - | 8.7 % |
| Capital Output ratio | - | 1.36 % |
| Capital to net output ratio | - | 1.50 % |