

# Prospects for the manufacture of rubber goods in Sri Lanka

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Of Sri Lanka's total rubber production of about 150,000 tons only about 6000 tons or 5 per cent is utilised locally for manufacture of rubber goods. Manufacture of rubber products is carried out on a wide scale. The production equipment in general use in the rubber manufacturing sector is far behind European standards; product standards, generally are far below accepted export quality standards.

The government is actively encouraging foreign investment in the industrial sector and generous incentives are offered. Export Processing Zones are being established to facilitate this development. Exports of rubber products from Sri Lanka has averaged around Rs. 2.0 million annually and there are prospects for increasing this. The rubber products market internationally is a highly quality conscious sector. There is every reason to believe, that Sri Lanka can develop and significantly expand its manufactured rubber goods sector to a level at which it is a supplier to World Markets generally, making use of its resources in raw material, labour and power; though there are in-built constraints to this, as discussed elsewhere in this note.

In the context of the present governments package of measures for investment by rubber goods manufacturing companies and the market prospects for these products, significant interest could be generated from foreign companies in this direction. The major areas of investment possibility is seen in Latex dipped goods, Latex thread and domestic products and cycle tyres. As the availability of Centrifuged Latex is very limited at present, investment in the production of Centrifuged Latex is seen as feasible. In the fields of stationery products with the exception of rubber bands, toys and sports products, interest may be developed at a later stage, as the economic advantages at present appears less clear cut.

## Local Consumption

Local demand for rubber averages around 6,000 tons or about 5 per cent of production annually, with about 75 per cent of this being used in the manufacture of new tyres and tyre re-threading. This means that only about 1,500 to 2,000 tons of rubber is used for conversion into general rubber products. The amount of rubber used in the form of latex is very small and has averaged around 500-600 tons annually.

The range of products other than tyres using rubber are cycle tyres and tubes, foam rubber products, rubber fibre products, rubber toys including balloons and a range of miscellaneous products such as erasers, rubber bands, rubber mats, rubber bushes, hoses etc. The whole range of products accounts for not more than 25 percent of local consumption.

In 1978, however, a noticeable increase in the use of latex is seen. The availability of latex for the manufacture of latex based rubber products has also been very limited; only three centrifuges are working in the island, and there is hardly any pre-vulcanized latex available commercially. This is one of the main constraints in the development of the rubber products industry. Local consumption of rubber from 1974-1978 is given in the following table.

## Organisation and Structure

The private rubber goods manufacturing industry is an industry of extremes. There are three fairly large companies employing over 500 people and over

120 companies employing less than 50 people. The only manufacturing company in the public sector is the Ceylon Tyre Corporation which employs about 2,000 people and produces tyres and tubes. Almost all the companies in the private sector have a wide range of products, the only specialisation seen is in the tyre re-treading and latex based product fields.

Of about a total of nearly 150 companies the breakdown in terms of products and product specialisation is:

Tyre & Tube manufacture	1
Tyre retreading only	14
Latex based products only	22
General rubber goods (including retreading & latex products)	108
	145

Of the total of 145 industries 115 units manufacture products from dry rubber while 28 industries are latex based. Two industries manufacture both dry and latex based products. It is to be noted that out of this total of 145 industries, 138 are small scale or cottage level industries.

The major private companies carry out the manufacture of rubber products as part of diversified organisations involving, for example, automobile agencies leading to tyre production. In the context of exporting rubber products, the potential is limited to the very small number of larger companies. Even these companies had to face an environment of restriction and control which resulted in investment suffering for many years.

## Local Consumption of Rubber (Metric Tonnes)

Year	Dry Rubber	Latex	Total
1974	5,630	611	6,241
1975	5,685	908	6,593
1976	6,350	917	7,267
1977	5,915	851	6,766
1978	7,624	1,448	9,072

pared, rubber (15.8%) is greatly superior to tea (5.1%) and tall coconuts (6.1%) but would be matched by hybrid coconuts (20.7%). It is concluded from this that too high a level of export taxes is a posi-

tive disincentive to replanting investment. Investment in rubber rehabilitation at prices currently forecast appears to be a sound proposition".

Producer margins have also been

on the increase in recent years (see table 15) but much of this increase could have been neutralised by the growing rate of inflation. Apart from the problem of replanting and productivity and the insti-

The production equipment in general use by rubber product manufacturing firms therefore is some 20 years behind European standards and consists mainly of second hand equipment from developed countries or equipment fabricated through local ingenuity but with little appreciation of technology.

#### Market Aspects

The domestic market for rubber goods in Sri Lanka was a classic example of a captive sellers market with no competition. The market was heavily protected in that imports were not allowed if the product could be made locally. The producers were not competing for the customers preference and the customer did not appear to complain.

In this situation the quality and design of most of the goods offered by Sri Lanka were and are with minor exceptions suitable for a nondiscriminating local market. The explanation appears to be at least in part in the high degree of protection that was afforded to domestic firms, which has had the effect of allowing manufacturers to produce and sell goods of even the poorest quality in the domestic market. It is unfortunate that the approach to the domestic market seems to have been carried over to export markets.

Another striking aspect is the total lack of specialisation in most of the major firms. Even the largest firms produce a bewildering variety of non-complementary products. The net result being that no product has received the attention it needs to keep pace with modern developments. It appears that of the older existing companies virtually no firm in the industry can boast that it manufactures a range of items that could compete on equal terms with products sold in the international market. Entry into exports will require process control to be strictly adhered to, in order to ensure a regular and guaranteed product quality. An International Trade Centre (ITC) expert in 1973 commented on the Sri Lanka rubber products industry in

the following terms: "that there is virtually no firm in the Ceylonese rubber industry that is properly geared to exporting".

#### Product Quality

The quality and other aspects that require improvement in regard to product ranges are briefly dealt with here.

#### — Automobile Tyres and Tubes:-

The present range of tyres offered from Sri Lanka is not suitable for any sophisticated market. Sri Lanka tyres are old fashioned when compared with the move towards radical ply tyres.

#### — Bicycle Tyres and Tubes:-

The quality appears to be acceptable, but if exporting is seriously considered production should cover a complete range of tyres and tubes. The tyres manufactured by two leading firms appear to be of reasonable quality but have a dull finish and the patterns are not sharp.

#### — Pharmaceutical Rubber Goods:

The local products are of very poor quality and of an obsolete design and type. The surgical gloves are badly manufactured in that there are drip marks on the surfaces, indicating bad flow properties and in addition, the thickness is not consistent. The baby teats and soothers too suffer from similar drawbacks and are sticky, uneven, rough and discoloured. They should be translucent and colour should be regular throughout and the finish smooth.

#### — Rubber Sandals:-

The market is highly competitive, and sandals needs re-designing with different colours. The shoes produced by most firms are not upto the required standards in design and production.

#### — Foam Rubber:-

Foam rubber mattresses produced are of acceptable quality, but face competition from Dunlopillo. However, the covering material must be of good quality.

— Rubber Sheeting:- Rubber sheeting produced is of good quality but this product appears to be outdated as more use is made of plastic sheeting.

— Rubber Toys:- Rubber balls produced are too heavy, do not bounce easily and colouring is unattractive. The balloons to be competitive must be comparable to manufactures of other international producers.

— Rubber Hose:- One of the biggest manufacturers and exporters exports 600,000 to 700,000 feet per year. This type of hose is not braided and has a limited market.

— Moulded Rubber Goods:- One leading firm produces a wide range of products i.e. automotive components, cycle parts and items for domestic use. For competition in export markets, specially automotive parts require oil resistance and for this synthetic rubber is required. Also the foreign automobile manufacturers specify very high quality standards, and this would require equipment such as injection moulding equipment.

A general comment that could be made in regard to manufacturers for export is that marketing as a concept has not been fully understood and has not been generally applied. Packaging materials and standards adopted are of a very low nature and there appears to be no background or experience of the requirements of a sophisticated market in respect of product presentation.

#### Exports of Rubber Products

Exports of manufactured rubber products from Sri Lanka in 1978 totalled about Rs. 2.9 million. The bulk comprised of un-hardened vulcanised rubber articles totalling 206 tons at a value of Rs. 2.7 million. The main importing countries are the EEC. It is to be noticed that there has been no substantial increase in the export earnings from rubber products over the period 1974-1979.

tutional framework, the other major areas in need of attention are research, marketing and the specific problems associated with the smallholder.

#### Rubber Research

Future market conditions for natural rubber producers appear quite promising. In this context particularly, the strengthening of the rubber research programme and its supporting service institutions in this country are an urgent necessity. The development of the rubber industry calls for a constant and sustained promotional effort, since maintenance of production requires that rubber trees be replanted every 26-33 years on a planned annual replanting programme. In Sri Lanka research possibilities have always existed for production of improved planting material suited to our particular ecological conditions through improving propagation methods and better husbandry techniques. The Master Plan Study team indicated that in Sri Lanka the research and development effort was not sufficient to support a substantial increase in production. It appeared that while in other major rubber producing countries key advances in production had been almost entirely a result of substantial investment in research by the industries and Governments of those countries, in Sri Lanka it was not so. The government has now realised it and the Minister of Plantation Industries has made a positive commitment in this regard. The scientists at Sri Lanka's Rubber Research Institute, the oldest such research institute in Asia, have done their best possible with the meagre resources made available. When the Minister visited the Institute's headquarters recently he was told of the problems arising from the lack of resources and he showed concern over this situation.

Another major constraint on the progress of rubber research in Sri Lanka according to the Master Plan Study, has been the unsatisfactory siting of the RRI's main research station at Darton Field Estate, Agalawatte. It has been found that the land here was topographically unsuited for sites for laboratory buildings, and housing was very restricted by the steep terrain, the location was uneconomical for access to the main rubber plantation areas, while local supporting services were poor especially for education. The Study team has gone to the extent of suggesting that heavy additional expenses at this

site would be "shortsighted policy" and a more appropriate long term policy would be to build a station on a more suitable Government owned rubber estate, while retaining the Darton Field site as a sub-station.

The development of a new site for the RRI and expansion of research activities had been justified by the long term prospects for rubber as the second largest export industry in the country, and also on the basis of long-term price forecasts and its major contribution to the livelihood of large numbers of families in the smallholder and private estate sectors and in State estates employment.

The need for added emphasis

sources for: Plant breeding and selection of clones; field testing of clones on commercial plantations; plant/soil/water relationships; soil conservation; propagation from single node leaf cuttings to give self-rooting clones; propagation by tissue culture; field diagnosis and control to root diseases; nitrogen fixation by rhizobial inoculation; and record keeping.

A strengthening of the cadres of professional staff has also been recommended. A separate Advisory Services Department of the RRI for small holders and private estates has been recommended as the existing Advisory Services Department has been found to be understaffed and under-equipped to deal with about 160,000 small holders

Table 15. RUBBER COST PRICE AND PRODUCER MARGINS IN SRI LANKA  
RUPEES PER KILOGRAM 1955-79

	FOB Price All Rubber	Colombo Market Price RSS No. 1	Cost of Production	Producers Margin
Average 1956-59	3.08	2.64	—	—
1960	3.58	2.73	1.65	1.08
1961	2.89	2.23	1.61	.62
1962	2.81	2.16	1.55	.61
1963	2.67	7.05	1.63	.35
1964	2.51	1.98	1.63	.42
1965	2.50	2.01	1.61	.40
1966	2.49	1.96	1.60	.36
1967	2.13	1.74	1.57	.17
1968	2.22	1.96	1.58	.38
1969	3.03	2.29	1.57	.72
1970	2.73	2.01	1.52	.49
1971	2.38	1.74	1.62	.12
1972	2.05	1.78	1.69	.07
1973	3.68	2.59	2.18	.41
1974	5.75	2.82	2.31	.51
1975	4.06	2.88	2.44	.44
1976	6.50	4.34	2.97	1.37
1977	6.58	4.53	3.75	0.78
1978	14.64	6.92	4.84	2.08
1979	19.42	9.12	6.50	2.62

Source: Central Bank and Rubber Control Department.

on R & D also becomes evident by the fact that because of neglect in sustaining the annual rubber replanting programmes there will be a severe decline in production in the 1980's as was shown in table 2. This situation will require an accelerated replanting programme in the next few years and from the 1990's there is expected to be an upsurge in production with output expected to increase by as much as 45 percent over the next 25 years. This would require a far more serious and intensified research effort. Specific areas, where strengthening of Research and Development were necessary, have been identified. In the Biological Department, for instance, the R & D effort was found to be inadequate and the Master Plan Study team has recommended additional re-

and the private estates.

The structural changes in the plantation industry appear to have had an adverse impact on the progress of R & D in the rubber sector. The Master Plan Study team in drawing attention to this situation has indicated that the wide climatic range of rubber planting in Sri Lanka requires a corresponding range of test-sites for planting materials, methods of pest and disease control, and other agronomic practices. The Rubber Research Institute, since its founding in 1924, established a tradition of working closely with many large and well-managed estates. Experiments were planted and recorded under the supervision of the research staff, but were tapped and tended as part of the estate crop.

In the last decade of extreme

political change, in which large estates were nationalised or broken up, many long-term experiments were lost and the maintenance and recording of the remainder became much more difficult. Three Government owned estates, which had been directly managed by the Rubber Research Board and were devoted intensively to field experiments, were taken away from the research organisation. The estates were placed under the control of the new State Corporations. Two of the managements have agreed to continue any of the trials, but on the third estate, which contained important components of the research programme all recording ceased, according to the findings of the Master Plan Study team.

The long established close relationship with the plantation industry, by which the findings of the research were distributed, have also been disrupted; though progress has been made in establishing working arrangements with the two State plantation authorities; the JEDB and SLSPC. The discontinuities of management and the unsettled conditions following from the land reforms have thus caused disruption of experimental progress, with a loss of information and wastage of past efforts. The RRI staff and the present plantation managers have succeeded, however, in resuming a number of long-term trials.

There is now an urgent need to establish a more organised flow of information from research to plantation managements. A more vigorous lead by the RRI is needed with production and frequent up-dating of advisory pamphlets, prepared jointly by the Research Institute and the Advisory Services. At present, decisions on replanting and other developments are reported as being made with inadequate consultation and without sufficient understanding of the information now available for the improvement of production.

Crop nutrition has also been neglected in certain areas; with the disruptions of the past 10 years, many records of past estate applications had been lost. This situation has required more active diagnostic techniques of fertiliser requirements and active attempts are now being made by the RRI in this regard, according to the Study team. They have found, however, that a far more important constraint on plant nutrition in Sri Lanka is the absence of adequate fertiliser distribution ar-

rangements beyond a 20-mile radius from Colombo. This, together with the reluctance to invest which has prevailed over the past ten years, has resulted in a serious need to restore soil fertility over large areas of rubber, a task for which existing knowledge is sufficient for practical guidance.

The Master Plan Study which showed much concern for the role of the RRI's Rubber Chemistry and Technology Department indicates that Malaysian studies had established that there were very real prospects of prosperity for the natural rubber industry provided increased production of standardised grades of raw natural rubber could be achieved. The Study team expressed fears that the main threat to this bright future was that the natural rubber industry could be too slow in its improvement of both standardisation and overall output, so that the world industry could be forced to invest further in substitutes. It has been suggested that Sri Lanka's RRI staff, therefore, should concentrate on methods to achieve more closely standardised qualities of rubber to meet the rising demands; rather than be concerned with any aspects of promotion and diversification of the sales of rubber internationally. Sri Lanka had already established a special world position in the supply of high quality rubber, particularly crepe, and it was most important that continued research and development helped the country to retain this position.

What appears to be the RRI's greatest immediate need, however, was more qualified and competent staff. The Institution will be called upon to provide the mainspring for the industry to upgrade and standardise Sri Lanka's rubber and this would require staff fully conversant with the manufacturing properties and service qualities of various grades of raw rubber. The Director of the RRI had suggested that over the next 10 years that this Department should more than treble its specialist cadres.

Another urgent requirement is found to be more up-to-date and specialised equipment, particularly for improvement and standardisation of the country's raw rubber production. The Study team found that the RRI had most of the necessary equipment but much of it very old, for example, a 75 year-old cast iron autoclave is in regular use, their latex centrifuges have done 30 years of service, and eight of their major pieces of

equipment (including the main boiler) are more than 25 years old. Supplementation of this equipment with modern machinery, and the replacement of worn-out items, is clearly a first priority.

#### Marketing

Future prospects in the world rubber market point to an increasing disparity between projected production and consumption; and as a result consumption is expected to increase at a higher rate than estimated production. This situation not only offers opportunities for producers to step up planting and to rehabilitate existing plantations; it also offers them a challenge to maximise the returns from all available sources of rubber production. The marketing function could play a vital role in this regard.

In the background of a present estimated total world production of natural rubber of 3.8 million tonnes and a synthetic rubber production of about 8 million tonnes, Sri Lanka's production is as low as 4 percent of the world's total natural rubber produced. World production increased by 44 percent in the decade 1967-77 while total consumption increased proportionately. Upto 1990 total world elastomer consumption is projected to increase by about 4.5 percent per annum. In the decade 1967-77 Sri Lanka's production remained static and its share of the increasing world production fell from 6 percent to 4 percent.

Over the years Sri Lanka has established an international reputation as a producer of high quality rubber, in conformity to the standards defined by International Standards of Quality and Packing for Natural Rubber Grades of which the Colombo Rubber Traders Association is an endorsing organisation, alongside similar organizations in all the major producing and consuming countries. Sri Lanka produced 153 million kgs. of rubber in 1979 of which about 92 percent was exported in the form of Sheet Grades (RSS) (56.99%); Latex Crepe (26.64%); Scrap Crepe (10.22%); Block Rubber (3.73%); and Sole Crepe (3.31%). Only 5.7 percent of the total production is domestically consumed reflecting the low level of industrialization. (See tables 16 and 17).

In Sri Lanka approximately 95 percent of the smallholders sell processed rubber, the remainder disposing of their production as latex. Processing is either under-

**Table 16 RUBBER AREA AND PRODUCTION 1910-1979**

Year	Registered Area (Acres)	Smallholdings below (10 acres)	Percentage of smallholdings below 10 acres	Production (M.T.)	Exports (M.T.)	Export as Percent of production	Foreign Exchange Earnings (Rs.'000)
1910	188001	5000	2.7	N.A.	1697		19,634
1920	460643	68295	14.8	N.A.	39500		89,961
1930	582247	120696	20.7	N.A.	76000		47,158
1940	636936	131992	20.7	107000	88000	82.2	113,111
1950	655225	171542	26.2	113500	118525	104.4	N.A.
1960	668948	192557	28.8	97276	104733	107.7	N.A.
1970	674335	209014	31.0	159158	154051	96.8	N.A.
1975	652802	214728	32.9	148751	160874	108.2	653,500
1976	651157	216116	33.2	152133	136932	90.0	889,586
1977	651157	216116	33.2	146243	134529	91.9	930,646
1978	650819	216572	33.3	155662	138045	88.7	2,02,544
1979	651531	216825	33.3	152704	128209	83.9	2,491,368

Source: Rubber Control Department

taken by themselves or by using private facilities or at Group Processing Centres. The private processing yields the poorest return to the producer due to poor processing and partly to limited bargain-

ing power when selling either to a licensed dealer or to the Department of Commodity Purchase. Most of the Ribbed Smoked Sheet (RSS) is produced by smallholders and the private sector whilst the Jana-

tha Estates Development Board (JEDB) and the Sri Lanka State Plantation Corporation (SLSPC) concentrate on producing high quality crepe, of which Sri Lanka produces 70 percent of total world