

I. ACKNOWLEDGEMENTS

It is widely recognised that the applicability of any long term policy prescription basically depends on the availability of sufficient background data. Monitoring the changes in the interdependent variables and analysing its implications are equally important. This report is the result of a detailed survey undertaken by the Marketing Division of the Rubber Board among the block rubber processing units in the country. All the units in the production line at the time of the survey were covered with the objectives of building up a data base and for understanding the nature of the problems facing the industry from a long term policy angle.

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II. Introduction

The emergence of close substitutes and synthetics have very often influenced the existing processing pattern of many of the natural products which in turn led the processing industry to promote product diversification into premium materials. One of such instances is the case of natural rubber (NR) processing industry. The growing popularity of synthetic rubber (SR) among the consumers has compelled the NR processing industry to promote product diversification and the development of Technically specified Rubber (Block Rubber), C. V. rubbers and modified rubbers etc. are a few instances of such initiative. The present report is based on a survey among the block rubber processing units in the country. The main objective of the report is confined to an attempt to analyse the changing dimensions of the industry vis-a-vis its present status in the rubber economy of India based on the details collected through a census method.

Prior to the analysis of the details collected on the industry, it will be useful to have a cursory look into the international setting of the industry on account of two reasons:

- a) It will help to give an understanding on the status of the industry among the major NR producers and
- b) the ensuing analysis will enable us to focus on various problems facting the industry which will be useful from a policy angle.

The year 1965 marks the introduction of technically specified block rubber (TSR) also known as crumb rubber in the world market. The growing importance of TSR in the market is evident from the steady increase in its exports from three major NR producers who control around 76% of world NR production.¹ Table - I shows the trends in the share of TSR expressed as a percentage of total NR exports from these three majors.

TABLE - I: Trends in the share of T S R expressed as a percentage of total NR exports (1976-85).

Year/Country	Malaysia	Indonesia	Thailand
1976	32.50	57.60	13.05
1977	34.62	65.16	15.75
1978	34.70	66.02	15.81
1979	35.35	66.39	18.22
1980	37.02	67.44	19.72
1981	41.03	69.68	15.92
1982	42.04	72.69	14.61
1983	45.35	75.65	13.47
1984	48.29	77.65	12.99
1985	50.40	NA	13.94

Source : Computed from quarterly NR statistical Bulletin, The Secretariate of ANRPC, Kuala Lumpur, Oct. 1986.

Except Thailand, the share of TSR in the case of other two countries have shown substantial increase during the period 1976-85. The trends in production have also shown considerable increase in the two countries and as on 1985 the share of technically specified block rubber (TSR) was 51.4% in Malaysia and it was 68.5% in the case of Indonesia. Natural rubber processed into TSR adopting new processing techniques is a notable improvement in the presentation of dry natural rubber. The major factors attributed to the growing popularity of TSR in the world market are the following:

- a) minimising quality variation in the processed rubber
- b) reducing manufacturing problems
- c) enhancing production efficiency
- d) lowering rejects and
- e) improving quality of finished goods

Alongwith these technical factors an important development in consumption technology that favoured increased use of advanced forms of NR, especially; TSR has been the

radialisation of tyres. Radialisation of tyres has meant increased use of NR in passenger car tyres - a shift from less than 10% to over 30%.² The increasing use of block rubber is evident from the trends in the share of the same in total imports of NR into the countries where radial tyres dominate the market. Table - II illustrates the point.

TABLE - II. Share of TSR in the total NR imports into EEC & USA from Malaysia and Indonesia.

Year	EEC	USA
	Share of TSR in total NR imports (in %)	Share of TSR in total NR imports (in %)
1976	44.01	62.11
1977	45.37	73.43
1978	44.07	74.85
1979	47.22	77.60
1980	48.80	76.10
1981	53.52	99.71
1982	55.04	75.21
1983	59.51	79.96
1984	57.70	82.47

SOURCE: Same as Table - I.

Though the trends in share of TSR is erratic, it is clear that a dominant portion of NR imported to EEC countries and USA is contributed by TSR. It is also plausible to point out that the demand for a qualitatively superior raw material basically depends on the changes in consumption technology. However, it is necessary to have a detailed enquiry to establish a direct correlation between the progress in the radialisation of tyres and the trends in the consumption of TSR. Nevertheless, it is worthwhile to presume that the extent of progress in consumption technology has a strong bearing on the fortunes of the TSR processing industry.

III. TSR processing industry in India.

Contrary to the emerging picture on TSR processing industry in the major NR producing countries, available information suggests that the Indian TSR processing industry could not make a serious dent on the market dominated by the conventional grades of NR. The commercial production of TSR started in India in 1974 and since then the relative increase in its shares in production and consumption are negligible. Table - III shows the trends in its production, imports and consumption in India.

TABLE - III. Trends in production, imports and consumption of TSR in India.

Year	Total production of TSR (in MT)	Production of TSR as a % of total NR production	Total imports of NR (in MT)	Imports of TSR as a % of total imports of NR	Total consumption of TSR (in MT)	Consumption of TSR as a % of total NR consumption
1981	2109	1.40	36850	22.3	11324	6.22
1982	2329	1.40	45725	37.9	17918	9.09
1983	2200	1.31	25394	46.9	15150	7.37
1984	4646	2.52	38014	30.1	13558	6.38
1985	6607	3.33	34652	22.1	16195	6.96

SOURCE: Same as Table - I and Statistics & Planning Division, Rubber Board, Kottayam.

The obvious gap between production and consumption of TSR in India can be explained in terms of imports of the same from other NR producing countries. Table - III also shows that trends in TSR consumption in India is unmatched by the trends in its production which is indicative of the existing potential of TSR in the country. However, the sluggish growth of this processing industry suggests that there are either

inherent supply constraints in the production sector or there is a lack of positive response from the consumption sector. For delineating the factors behind the present plight of the industry, an analysis of the three inter-related aspects, viz., the production sector, the consumption sector and the price factor are necessary. The subsequent sections of this report deal with a clinical scrutiny of the main features of these aspects along with the contributing factors influencing the future prospects of the industry.

(1) The Production Sector.

The production sector is characterised by the co-existence of processing units in the co-operative sector, public sector and private sector. As on 1986-87, thirteen units are in the production line varying in installed capacity and capacity utilisation. Till March, 1987, the total installed capacity of the TSR processing units in the country was 20400MT³ and the total production was only 8337.75 MT. Thus the capacity utilisation for the year 1986-87 is worked to be 40.87% for the units as a whole. But it is important to note that there exists a sector-wise difference in the capacity utilisation and if the three co-operative units are taken together, the relevant figure goes upto the extent of 59% and among the three one has the record of utilising 83% of its installed capacity. The combined average of the capacity utilisation in the private sector is only 32.62%.

Since March 1987, three more factories are commissioned in the co-operative sector with an installed capacity of 7200 MT per annum. At present, work is in progress for one factory in the public sector with an annual licenced capacity of 1440 MT and six factories in the private sector with a total licenced capacity of 8160 MT per annum. Table - IV shows the relevant figures on installed capacity as well as licenced capacity as on August, 1987.

TABLE - IV Sector - wise installed and licenced capacity of TSR processing industry in India as on August, 1987.

Sector	Installed capacity (in MT per annum)	Licenced capacity but not installed (in MT per annum)	Total licenced capacity (in MT per annum)
Co-operative Sector	14400 (52.18)	14400 (38.71)
Public Sector	2880 (10.43)	1440	4320 (11.61)
Private Sector	10320 (37.39)	8160	18480 (49.68)
Grand Total	27600 (100.00)		37200 (100.00)

Sources: 1) Returns from 13 TSR processing Units.
2) Marketing Division, Rubber Board.

Though the co-operative sector at present account for more than 50% of the total installed capacity, there are indications that its premier position will be taken over by the private sector in future. There are at least two important factors which explain the growing interest shown recently by the private sector in this regard.

a) Of late, there is a growing acceptance of TSR (especially scrap grades by the tyre sector) in the market and its favourable prices compared to crepe rubber have not only prompted many of the private crepe mills to shift to TSR processing but also encouraged new entrants to set up processing units.

b) Another important factor which played a crucial role is the efforts from the Rubber Board in the form of market promotion of TSR. It is with the active involvement of the Board that six factories have been established in the co-operative sector to process TSR and since then it has made all efforts to convince the manufacturing industry about the advantages of consuming it.

The combined effect of these two factors is that many of the crepe mills in the private sector are evincing a keen interest in converting their units into TSR processing units. According to the available indications, more than half a dozen crepe units have already approached the Board for conversion. At present, the co-operative sector accounts for 51.05% of total TSR production and shares of the private sector and the public sector units are 40.38% and 8.57% respectively. Therefore, with the establishment of newly licenced factories in the private sector, the possibilities are that the dominant position enjoyed by the co-operative sector will be challenged by the private sector. Interestingly, as mentioned earlier, the capacity utilisation in the private sector is no-where near the performance of the co-operative sector even though its capacity utilisation is not upto the desired extent.

An important reason for the lower capacity utilisation by the industry appears to be the fact that more than 90% of its production is accounted by the scrap grades of TSR and so far no serious attempt has been made to process latex grades of TSR. Table V shows sector-wise production details during the year 1986-87.

TABLE - V Sector-wise production of TSR during 1986-87.

Sector	Total production (in MT)	Total production of latex grades of TSR (in MT)	Total production of scrap grades of TSR (in MT)
Co-operative Sector	4256.52 (100.00)	429.00 (10.08)	3827.52 (89.22)
Private Sector	3366.86 (100.00)	167.48 (4.97)	3199.38 (95.03)
Public Sector	714.37 (100.00)	181.02 (25.34)	533.35 (74.66)
	8337.75 (100.00)	777.50 (9.33)	7560.25 (90.67)

Source: Same as Table IV.

Note: Figures in brackets indicate the percentage share of each category.

It is clear from table V that the processing units in the three sectors appear to be reluctant to process latex and for the industry as a whole the respective shares of latex grades and scrap grades are 9.33% and 90.67%. While the respective sector-wise shares of the public sector and co-operative sector are above the average share of latex grades for the industry as a whole, the private sector shows no inclination to process the latex grades as evident from its negligible share of 4.97%. The factors contributing to this peculiar situation will be explained in a subsequent section dealing with the consumption sector. For the present, it will suffice to bear in mind the fact that the lower capacity utilisation in the industry can be explained to a large extent in terms of a high degree of dependance on scrap rubber at the expense of latex and the peculiar characteristics existing in the scrap rubber market.

From the foregoing analysis it becomes evident that there is a very low level capacity utilisation in the industry and more than 90% of the industry's production, is accounted by scrap grades of TSR. In this connection, it is interesting to note that the industry is facing a stiff competition in the raw material market for scrap rubber from the well organised crepe mill sector numbering around 110. According to a recent estimate more than 70% of the scrap rubber produced in the country is being consumed by the crepe sector. Though inferior to crumb rubber in many respects, a lion's share of crepe rubber is consumed by the tyre sector. An oft repeated reason for the preference given to the crepe rubber is its relatively cheaper prices compared to TSR. This characteristic of the market has serious implications on the price movements of scrap and consequently on the fortunes of TSR. For instance, an increasing or a steady purchase of crepe rubber by the tyre companies will initiate an upward trend in its prices which in turn result in increasing the price of scrap rubber. However, such an increase in the scrap rubber prices will not enable the TSR processing units to take advantage of the situation since TSR price movements are closely related to price movements of tyre grades (RMA IV, RMA V and ungraded rubber) of sheet rubber. On the contrary, the TSR units will find themselves

squeezed in a situation of increasing raw material prices which bear no significant relationship to the price movements of sheet rubber. Though the tyre grades of sheet rubber occupy a formidable position in the total NR production in the country, the impact of the price movements of these grades on the scrap rubber price movements is negligible. This peculiar characteristic of scrap rubber price movements is confirmed by the findings of a study recently conducted by the Market Research Wing of the Rubber Board.

Thus, the emerging conclusion is that not only TSR processing industry is facing a stiff competition in the raw material market from the crepe mill sector but also the industry finds it difficult to adjust its products' price to the changing conditions in the scrap rubber market. Hence the TSR processing industry has to offer competitive prices in the raw material market to procure enough scrap rubber and in the product market it has to follow the price movements of the dominant tyre grades of sheet rubber.

Another important aspect on the supply side which deserves mention is the cost of processing TSR. Since the production of latex grades of TSR is negligible the details of only scrap grades of TSR are available. For the year 1986-87, the average cost of processing for the eleven units reported cost information is Rs. 2.65 per kg of TSR. It is found that there exists a wide variation among the units in the cost of processing to the tune of 45%. The units which furnished cost data for the three year period (1984-85, 1985-86 and 1986-87) show that there is a progressive reduction in the cost of processing per unit with an increase in capacity utilisation. This is also evident from the relative costs of processing for units varying in capacity utilisation. Though the dependability of cost data is questionable, it is plausible to suggest that there exists a tremendous potential for the industry for substantial reduction in the cost of processing with an increase in capacity utilisation.

The analysis of the various aspects of the production sector suggests that in the absence of any inherent supply constraints, it is the demand-imposed supply constraints which do

influence the production of TSR in India. Hence an examination of the main characteristics of the consumption sector assumes a crucial part in the present study. The succeeding sections attempt to analyse the significant role played by the demand side (consumption sector) and its consequences on the industry.

(ii) The Consumption Sector.

The consumption sector consists of two broad groups viz; the tyre sector and the non-tyre sector. The most important feature of the NR consumption in the country is that it is characterised by the dominance of the conventional grades of sheet rubber. Table VI shows the trends in NR consumption during 1980-81 to 1985-86.

TABLE - VI. Trends in grade-wise consumption of NR during 1980-81 1985-86 (in M. T)

Grades/Year	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
RMAGrades	118425 (68.21)	128530 (68.21)	131935 (67.47)	139765 (66.72)	151190 (69.52)	163465 (69.43)
EBC	30543 (17.59)	31805 (16.89)	25740 (13.16)	32500 (15.51)	28637 (13.17)	29625 (12.58)
Latex (DRC)	13820 (7.96)	14930 (7.92)	16850 (8.62)	16980 (8.11)	19340 (8.89)	21445 (9.11)
PLC & Sole Crepe	1845 (1.06)	1535 (0.81)	2210 (1.13)	2590 (1.24)	3055 (1.40)	2830 (1.20)
Block Rubber	7670 (4.42)	10120 (5.37)	16840 (8.61)	16540 (7.90)	14170 (6.51)	17105 (7.27)
Others	1327 (0.76)	1500 (0.80)	1970 (1.01)	1105 (0.52)	970 (0.51)	970 (0.41)
Total:	173630 (100.00)	188420 (100.00)	195545 (100.00)	209480 (100.00)	217510 (100.00)	235440 (100.00)

Source : Statistics and planning Division, Rubber Board.

Note : Figures in brackets indicate the percentage share of each grade in total consumption.

Table - VI clearly shows the dominant position enjoyed by the sheet grades whose share revolves between 65% to 70%. It is true that the relative share of TSR has gone up from 4.42% in 1980-81 to 7.27% in 1985-86. But what is important to be analysed is whether the relatively increasing consumption of TSR has any positive impact on the production sector? For this purpose, it is essential to delineate the main factors affecting the trends in TSR consumption in the country.

As mentioned at the outset, the consumption sector consists of two groups and it is the tyre sector which plays a crucial role in determining the fortunes of TSR processing industry in India owing to three reasons:

- a) The tyre sector (12 major units alone) account for more than 47% of total NR consumption in the country.
- b) These twelve tyre units account for more than 70% of the TSR consumed in India and
- c) as mentioned earlier more than 90% of TSR production in the country consists of the scrap grades of TSR (ISNR 10, ISNR 20, ISNR 50 and the off-grade) which is basically catering the requirements of the tyre sector. Further a lion's share of the SMR 20 imported from Malaysia by STC is also consumed by the tyre sector.

Another striking feature in the pattern of TSR consumption in India is that more than 70% of it is accounted by imported rubber, viz. SMR 20 as on 1986-87. Table-VII shows the grade-wise TSR consumption by twelve major tyre units in the country.

TABLE - VII. Trends in grade - wise consumption of TSR by the twelve major tyre companies (1982-83 to 1986-87).
(in M. T)

Grades/Year	1982-83	1983-84	1984-85	1985-86	1986-87
ISNR 5	15 (0.11)	19 (0.15)	10 (0.12)	9 (0.07)	7 (0.05)
ISNR 10	1 (0.01)	6 (0.05)	103 (1.20)	89 (0.70)	47 (0.31)
ISNR 20	203 (1.51)	902 (7.18)	1858 (21.62)	3959 (31.21)	3971 (26.14)
ISNR 50	Nil (0.00)	Nil (0.00)	150 (1.75)	556 (4.38)	407 (2.68)
Off-grade	200 (1.48)	150 (1.19)	295 (3.43)	43 (0.34)	31 (0.20)
SMR 10	Nil	1 (0.01)	Nil (0.00)	Nil (0.00)	Nil (0.00)
SMR 20	13037 (96.89)	11484 (91.42)	6179 (71.88)	8029 (63.30)	10727 (70.62)
GRAND TOTAL :	13456 (100.00)	12562 (100.00)	8595 (100.00)	12685 (100.00)	15190 (100.00)

Source : Same as Table - VI.

Note : Figures in brackets indicate respective shares of each grade.

Table-VII clearly shows the existing potential of ISNR 20 alone in the tyre sector in terms of import replacement of SMR 20. But it is more interesting to note the relative share of TSR in total NR consumption in the tyre sector. The NR consumption by the tyre companies is dominated by sheet rubber and crepe rubber as evident from Appendix-I. The share of TSR never exceeded 13% during the period 1982-83 to 1986-87. Thus, if the substitutes markets are also taken into consideration (equivalent sheet and crepe grades), more than 66,000 tonnes worth of potential exists in the tyre sector alone for ISNR 20 and ISNR 50 as on 1986-87. Very often,

the inherent qualitative and technical advantages of TSR are pushed to the background on the plea that in terms of the relative prices the sheet grades and crepe grades are more attractive. This phenomenon of giving preference to conventional grades at the expense of TSR can be tentatively explained in terms of the oligopoly power enjoyed by the tyre companies in the tyre market and oligopsony power enjoyed in the NR market. This observation is in conformity with findings of the BICP study group on Automotive Tyre Industry (1985) where it is clearly pointed out that due to existing collusive arrangements among the tyre units the inter company price variations of tyres are negligible and many instances of tyre price hikes are not justified.⁴ Therefore, in the absence of a competitive situation in the product market, the inclination to purchase a technically superior raw material is absent and at the same time maximum attention will be given to the price factor.

In the non-tyre sector also, there exists a tremendous market potential to be exploited by the TSR processing industry. Next to the automotive tyres and tubes, the other main groups which account for a substantial portion of total NR consumption are cycle tyres and tubes (12%), footwear (10%) and belts and hoses (7%). According to the available information with the Rubber Board, more than 80% of total NR consumption of these three groups is constituted by sheet grades and crepe grades of rubber. As is well known, to a large extent, these conventional grades can be replaced in the footwear and cycle tyres and tubes manufacturing by ISNR 10, ISNR 20 and ISNR 50. Among the conveyor belts and hoses group, except for the food conveyer belts (recommended grade is ISNR 5), there exists an enormous potential to be tapped by the scrap grades of ISNR as mentioned above.

The plight of latex grades of TSR is different. On the demand side, they find it difficult to penetrate into the well established markets of Pale Latex Crepe (PLC) and higher grades of sheet rubber. As in the case of scrap rubber, the TSR processing industry is also facing stiff competition

in the raw material market of latex. The sources of competition are not restricted to PLC processing group and the higher grades of sheet rubber but mainly from the latex concentrates processing industry since at present it is the latex concentrates which enjoys maximum premium among the various forms of processed rubber over the average price of ungraded sheet rubber. For instance, the annual average price of centrifuged latex was Rs. 26.31 per/kg of d. r. c. during 1985-86 and Rs. 23.67 in 1986-87. The respective average prices of ungraded sheet rubber during these two years were Rs. 16.61 and Rs. 15.95 respectively. There is a general agreement that the processing cost per/kg of d. r. c. of centrifuged latex is within the range of Rs. 4.50/- to Rs. 5/-. Thus even if Rs. 5/- is considered as the average processing cost per kg (drc) of centrifuged latex, its net sales price compares favourably with the higher grades of sheet rubber. Hence the latex concentrates processing industry can afford to pay a relatively higher price to field latex compared to the TSR processing industry. Therefore, it is plausible to explain the lower levels of output of latex grades of TSR mainly to the demand imposed supply constraints. However, the sluggish growth of output of latex grades of TSR suggests the need for considerable market promotional work to be undertaken by the concerned agencies

The peculiar characteristics of the private sector deserve due mention at this juncture. At present, a majority of the processing units in the private sector belong to the estate sector who mainly depend on own sources of raw rubber. One striking feature of this group is that there is a tendency to adjust the product-mix according to the changing market conditions of different forms of processed rubber. For instance, a market trend in favour of crepe rubber and higher grades of sheet rubber will result in the processing of these forms of rubber rather than processing TSR. The prevalence of such practices in the estate sector will naturally lead to lower levels of capacity utilisation.

Another serious problem affecting the intake of TSR among the manufacturers is the difficulty in adjusting the TSR with the

existing mixing mills possessed by many manufacturing units. It is reported that there is reluctance on the part of small manufacturing units to consume TSR owing to the difficulty in adjusting with the smaller mixing mills. However, to a large extent, this problem can be solved by introducing the block rubber of smaller size suitable for the existing mixing mills in the small scale sector.

What is emerging from the foregoing analysis is that it is the policies pursued by the consumption sector which do account for present plight of the industry to a large extent. Of late, there is a gradual shift in the attitude of a few tyre companies who started purchasing ISNR 20 and ISNR 50. If this trend is sustained, it may lead to increased capacity utilisation by the industry by stepping their production of scrap grades of TSR. But the prospects of this positive trend depends on two closely related factors viz.,

- a) the availability of sufficient quantity of scrap rubber at reasonable prices depends on the trends in the demand for crepe rubber and
- b) the maximum utilisation of installed capacity of the industry depends mainly on the extent of latex processed which is intimately related to exploiting the existing market potential of latex grades of TSR.

The processing of latex grades of TSR deserves considerable importance since according to well known estimates the latex forms around 80% of the total NR production and the remaining 20% is accounted by scrap rubber. Therefore, the success of any earnest attempt to enhance the capacity utilisation of the industry is closely related to the extent of latex processed. As mentioned earlier, there are limitations to increase the capacity utilisation by processing more of scrap rubber. However, the keen interest recently shown by a few crepe mills for converting into TSR processing factories and the present initiative in the estate sector to regularise TSR production are the two positive lines of development giving considerable thrust to an industry which has to wake up from its dormancy.

(iii) The price factor

The relative price of TSR is a very crucial factor determining not only the development of the industry but its very existence vis-a-vis other forms of processed rubber. As mentioned in the preceeding section, the prices of various grades of

TSR is mainly determined by the price movements of tyre grades of sheet rubber owing to two reasons:

- a) among the various grades of TSR processed, it is the scrap grades which constitute more than 90% of total production of TSR of which more than 70% is being consumed by the tyre sector and
- b) the pattern of consumption of the tyre sector shows that around 70% of its consumption is accounted by the sheet grades. Thus the sheet grades have the position of a 'price leader' in the market and consequently its price movements will have a strong bearing on the price formation of major grades of TSR processed in the country.

At present, the Kerala State Co-operative Rubber Marketing Federation (KRMF), an apex body of the rubber processing and marketing societies is the main supplier of TSR to the NR consuming industry. As per the existing arrangements, prices of various grades of TSR is based on RMA IV grade of sheet rubber. For instance, ISNR 20 is obtaining a price almost equal to RMA IV depending on the price movements of RMA IV and RMA V (either equal to RMA IV or paise 50 over RMA V whichever is lower).

Table - VIII shows the trends in the annual average prices of RMA IV, ISNR 20 and scrap rubber.

TABLE - VIII. Trends in the annual average prices of RMA IV, ISNR 20 and scrap rubber (1980-81 = 100).

Year	RMA IV		ISNR 20		Scrap rubber (Rs. per qtl) of Estimated Dry Rubber Realisation	
	(Rs. per qtl)	Index	(Rs. per qtl)	Index		Index
1980-81	1242	100	1220	100	937	100
1981-82	1460	117.55	1438	117.87	1120	119.53
1982-83	1440	115.94	1448	118.69	1154	121.16
1983-84	1750	140.90	1711	140.25	1328	141.73
1984-85	1655	133.25	1539	126.15	1452	154.96
1985-86	1732	139.45	1679	137.62	1477	157.63
1986-87	1660	133.66	1626	133.28	1382	147.49

Sources: 1) Returns from ten TSR processing units.

2) Marketing Division, Rubber Board.

Table - VIII clearly shows the erratic pattern in the annual average scrap rubber prices compared to the price movements of RMA IV and ISNR 20. Except for the year 1982-83, the annual average prices of ISNR 20 closely followed the price movements of RMA IV. Thus it is worthwhile to mention that the TSR processing industry has limitations to adjust with the raw material price movements since its price movements have a different source of origin.

One of the main arguments raised by the rubber goods manufacturing industry against the TSR processing industry is that the prices of TSR grades are not competitive compared to other forms of processed NR. It is true that the TSR prices have to be competitive, especially, those of the latex grades and there should be efforts to rationalise the processing cost by enhancing capacity utilisation in the industry.

In this context, another important aspect which deserves considerable attention is the promotion of speciality rubbers. The response to a preliminary survey recently conducted shows the keen interest evinced by the manufacturing sector on Constant Viscosity and General purpose rubbers. It is plausible to promote the speciality rubbers suited to the requirements of the manufacturing sector. An added advantage linked to the promotion of speciality rubbers is that it will enable to enhance the consumption of latex which will lead to an increase in the capacity utilisation by the existing processing units. Therefore, it appears that unless there are earnest attempts to systematically promote the TSR grades by convincing the manufacturing industry about the technical advantages of consuming TSR, the capacity utilisation will never be at the desired levels.

IV. Conclusions and Recommendations of the Study.

There are remarkable differences between the TSR processing industry in India and its counterparts in other major NR producers arising mainly from the fact that India has a relatively well developed rubber goods manufacturing sector and consequently it has to import NR to meet the consu-

mption requirements. The production of TSR in other major NR producers is export-oriented.

The growth of TSR processing industry in Malaysia and Indonesia is mainly propelled by the changes in consumption technology in USA and EEC countries who account for a major portion of imports.

TSR processing industry in India is still at its infancy as evident from its negligible shares in total NR production, consumption and imports. A detailed analysis of the industry shows that the capacity utilisation is at uneconomic levels and the main reason for such a situation is lack of sufficient positive response from the consumption sector comprising of tyre and non-tyre sectors. The role of inherent supply constraints within the production sector causing lower levels of capacity utilisation is minimum and it is the demand imposed supply constraints which do account for the present plight of the industry.

Moreover, it is found that more than 90% of the TSR production is accounted by scrap grades and any attempt to enhance capacity utilisation must take into consideration the processing of latex grades. An oft repeated reason for the inertia to process latex grades stems from 'unfavourable response from the manufacturers owing to relatively higher prices of TSR (latex grades) compared to PLC and equivalent sheet grades. As suggested earlier, an earnest attempt has to be made to promote and popularise the speciality rubbers suited to the requirements of the manufacturing industry. The consequent increase in the intake of latex will reflect in higher levels of capacity utilisation in the processing industry. A complementary effect of such an initiative is the considerable possibilities opened for rationalising the cost of processing.

Another important line of action is with regard to the licencing policy. It is necessary that all encouragement should be given to the conversion of crepe mills into TSR processing units which entails only relatively minimum investment. However, it is essential to note that the licencing

of new units has to be in tune with the trends in the production and consumption of TSR. Therefore, a judicious policy must be based on an assessment of reliable estimates of the relevant data which will form the basis for future course of action.

APPENDIX - 1.

Grade - wise consumption pattern of tyre units during 1982-83 to 1986-87.

Y e a r	Total consumption of NR by 12 major tyre units	% share of sheet grades in total NR consumption by the 12 tyre units	% share of crepe grades	% share of TSR	% share of others
1982-83	105,521	67.55	17.64	12.75	2.06
1983-84	115,020	67.84	20.31	10.92	0.93
1984-85	113,944	71.92	19.70	7.54	0.84
1985-86	110,653	68.32	19.37	11.46	0.85
1986-87	116,990	69.34	16.78	12.98	0.90

Source : Computed from S & P Division, Rubber Board.

APPENDIX - II

BLOCK RUBBER PROCESSING UNITS

Co - operative Sector :

1. Kerala State Co-operative Rubber Marketing Federation Ltd., Warehouse Complex Road, Kadavanthra, Cochin, Kerala.
2. Kozhikode Dist. Co-operative Rubber Marketing Society Ltd., Cherooty Road, Calicut - 673 001, Kerala.
3. Palai Marketing Co-operative Society Ltd., Palai, Kerala.
- * 4. Muvattupuzha Taluk Rubber Marketing Society Ltd., Muvattupuzha - 686 661, Kerala.
- * 5. Palghat Dist. Co-operative Rubber Marketing Society Ltd., G. B. Road, Palghat - 678 001, Kerala.
- * 6. Thodupuzha Taluk Co-operative Rubber Marketing Society Ltd., Thodupuzha - 685 584, Kerala.

Private Sector.

1. Mambad Rubber Manufacturing Co. Ltd., XXIX/649 A, Kadavanthra Road, Cochin - 20, Kerala.
2. Hevea Crumb Rubber (p) Ltd., Poovarany, (via) Palai Kerala.
3. Rubber 'O' Dynat (India) Pvt. Ltd., Industrial Estate, Plot No. 20, P. B. No. 21, S. Kalamassery, Cochin, Kerala.
4. Velimalai Rubber Co. Ltd., Malaya Buildings, K. K. Road Kottayam, Kerala.
5. Travancore Rubber & Tea Co. Ltd., TC No. 12/114, Pattom, Trivandrum - 695 004, Kerala.

6. The Malankara Rubber & Produce Co. Ltd., Kodimatha, Kottayam - 1, Kerala.
7. Rajagiri Rubber & Produce Co. Ltd., P. B. No. 47, Alleppey - 686 001, Kerala.
8. Pullengode Rubber & Produce Co Ltd., Calvetty, Cochin - 682 001.

Public Sector:-

1. Pilot Crumb Rubber Factory, Rubber Board, Kottayam-9 Kerala.
2. Plantation Corporation of Kerala Ltd., P. B. No. 20, Kottayam - 686 004, Kerala.

* Units which have completed the work, but not started commercial production at the time of the survey.

FOOT NOTES & REFERENCES

1. For details see **IRSG Bulletin**, Vol - 41, No. 4, Jan. 1987, London.
2. B. C. Sekhar, **The Malaysian Natural Rubber Dilemma** in the proceedings of INRC, 1985, Kulalumpur.
3. The installed capacity is worked out on a three shift basis and 20 working days in a month.
4. Bureau of Industrial Costs & Prices, **Automotive Tyre Industry**, Vol-1, New Delhi, Dec. 1985, P-15.

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