



सत्यमेव जयते

GOVERNMENT OF INDIA
TARIFF COMMISSION

REPORT
ON THE
Fixation of Raw Rubber Prices

BOMBAY 1967

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India, Tariff (——Commission)

Report on the Fixation of
Raw Rubber Prices,—1967



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PERSONNEL OF THE COMMISSION

SHRI M. P. PAI	<i>Chairman</i>	
SHRI M. ZAHEER	<i>Member</i>	
PROF. K. T. MERCHANT	<i>Member</i>	
SHRI S. SUBRAMANIAM	. . . . .	<i>Member</i>	(from 1-5-1967).

SECRETARY
DR. P. V. GUNISHASTRI



- (6) The expenses incurred by a planter for replantation should be considered as capital investment and this replantation cost must be earned through the sale of rubber. One half of the development expenses (*viz.*, Rs. 11.67) should be included in the retention price of the grower. A new scale of subsidy is recommended to be paid to the growers to enable them to meet the cost of replantation which will not be fully recovered through the retention price.
- (7) A price of Rs. 415 per 100 kgs. should be fixed as the price to be retained by the growers *f.o.b.* Cochin for R.M.A. 1 grade rubber. This will be exclusive of sales-tax and cess. The prices for other grades and for preserved latex will be fixed after adjustment of grade differentials indicated by the Commission.
- (8) A reduction in the cess needs to be considered by Government.
- (9) The rehabilitation allowance provided for replantation in Kanyakumari district of Madras State is not on a par with that in the rest of the State, and needs to be looked into by the Government of Madras.

2. Government accept recommendations (1) and (3) above.

3. Government have taken note of the recommendation (2) above.

4. Government have taken note of the recommendations (4) & (5) above and steps will be taken to implement them to the extent practicable.

5. Recommendation (6) is under examination by the Government.

6. Government have already accepted recommendation (7) in para 1 of their Resolution No. 19(15)-Plant(B)/67, dated the 26th September, 1967, published in the Gazette of India Extraordinary, dated the 27th September, 1967.

7. Keeping in view the expansion of the developmental and research activities of the Rubber Board for further development of the rubber plantation industry. Government do not consider it feasible to reduce the existing rate of cess on rubber, *viz.*, 30 Paise

(iii)

per kg., as suggested by the Commission in recommendation (8) above.

8. Government have brought the recommendation (9) to the notice of the Government of Madras for necessary action.

Sd.

(S. BANERJEE)

Deputy Secretary to the Government of India.

No. 16(5)Plant(B)/67

New Delhi, the 15th December, 1967.

ORDER

ORDERED that a copy of the Resolution be communicated to all concerned.

ORDERED also that the Resolution be published in the Gazette of India for general information.

Sd.

(S. BANERJEE)

28-12-1967.

Deputy Secretary to the Government of India.

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE

New Delhi-11, the 15th December, 1967

RESOLUTION

No. 16(5)Plant(B)/67.—In Government's letter No. 16(2) Plant(B)/65, dated the 28th October, 1966, the Tariff Commission was requested, under section 12(d) of the Tariff Commission Act, 1951, to conduct necessary enquiries in regard to the cost of production of raw rubber and to submit a report on the fair prices for its different grades and qualities. The Commission has submitted its report wherein the following recommendations have been made:—

- (1) A census of actual area under rubber with special reference to mature area should be undertaken by the Rubber Board with the assistance of Revenue authorities in order to make more reliable data available.
- (2) The Rubber Board's estimate of an average yield of 294 Kg. per hectare (262 lbs per acre) in the small holdings sector is an underestimate. It is desirable to devise more stringent measures of checking transactions by dealers to ensure not only the correct data of production but also the assessment of the cess actually due.
- (3) The existing differentials in the prices of grades of rubber should be retained as they are.
- (4) For an orderly marketing of indigenous production, it is necessary that imports should come in regular monthly instalments and not as has happened during the latter half of 1966 in large quantities, just when the tapping of trees is at its height.
- (5) The Rubber Board should be consulted both on the volume and programming of imports. The imports should be evenly spread out over the year.

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE
RESOLUTION

New Delhi, the 26th September 1967.

No. 19(15)Plant(B)/67.—Government had requested the Tariff Commission to enquire into the cost of production of indigenous raw rubber and to recommend to the Government the fair price that should be paid for raw rubber. The Commission had *inter alia* recommended that a Price of Rs. 4,150 per tonne f.o.b. Cochin would be a fair selling price for RMA Grade I rubber. The Government of India have accepted this recommendation.

2. In the course of examining the question of fair price of raw rubber, Government have observed that the small growers of rubber are in need of some immediate support to improve their economic viability. It is, therefore, proposed to give the small growers of rubber with holdings upto 2 hectares a cash subsidy of Rs. 175 per hectare and to those with holdings above 2 hectares and upto 4 hectares a cash subsidy of Rs. 150 per hectare, during the current fiscal year.

3. Government are, of the view that the small growers should be able to acquire sufficient competitive strength to stand on their own as early as possible. Government have decided to appoint a Committee to go in depth into the economics of the small holdings and to suggest such measures as may be necessary to improve the efficiency and to contribute to the stability of the sector.

4. The Committee will, among other matters that it may find necessary to go into in this connection:—

- (i) take into account the various kinds of assistance that are already being extended to the small growers by the Rubber Board and consider whether any additional assistance to this sector is necessary and if so, suggest the manner and extent to which such assistance should be given, and the period for which such assistance should be continued ;

(vi)

- (ii) consider and advise Government on other measures which are required to be taken to enable the small growers to attain economic viability on the basis of the fair selling price of raw rubber accepted by the Government ; and
- (iii) advise the Government on the role of co-operatives in stabilising the small sector.

The Committee will consist of the following:—

CHAIRMAN

- (1) Shri T. M. Abdullah, Retired Judge, Rahmat Bagh, CANNANORE (Kerala).

MEMBERS

- (2) Additional Secretary, Agriculture Department, Government of Kerala, TRIVANDRUM.
- (3) Shri Mathew Maniangadan (Ex-M.P.), KOTTAYAM (Kerala).
- (4) Shri Cheriyan Kappon (Ex-M.P.), PALAI (Kerala).
- (5) Shri P. S. Habeeb Mohammed, Chairman, Rubber Board, KOTTAYAM (Kerala).

5. The Committee shall submit its Report to the Government within a period of six months.

ORDER

ORDERED that a copy of the Resolution be communicated to all concerned.

ORDERED also that the Resolution be published in the Gazette of India for general information.

P. C. ALEXANDER,

Jt. Secy.

28-12-1967.

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ERRATA

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S. No.	Page.	
1.	(vii)	Under chapter 4, <i>insert</i> the figures '25' against '9. Reclaimed rubber'
2.	(viii)	Under chapter 8, <i>for</i> 'Acknowledgement' <i>read</i> 'Acknowledgements'.
3.	4	In para 3.1 (1) <i>for</i> 'evently' <i>read</i> 'evenly'.
4.	4	In para 3.1 (2) <i>for</i> 'drought' <i>read</i> 'droughts'.
5.	10	In para 4.4 last but one line below <i>for</i> '4.047' <i>read</i> '4,047'.
6.	12	In table 4, in the total columns, read the figures 440, 185 and 326 against the sub-heading '(b) lbs. per acre'.
7.	13	In table 4-first col. last line <i>for</i> '(b) Yield per Acres' <i>read</i> '(b) Yield per Acre'
8.	18	In para 5.2, line 14 from top, the words 'as shown' occurring after 'figures' <i>be deleted</i> .
9.	24	In para 7.5, line 21, from top, <i>for</i> 'available' after much <i>read</i> 'valuable'.
10.	27	In line 4 after table 8, <i>for</i> 'rubber of all types' <i>read</i> 'rubber if all types'.
11.	33	In table 13, against 1964-65, <i>for</i> '15,002' <i>read</i> '15,003'.
12.	45	In the box heading of para 18 <i>for</i> 'Basis for price' <i>read</i> 'Basis for prices'.
13.	45	In the penultimate line of para 18.1, <i>for</i> 'weight' <i>read</i> 'weigh'.
14.	46	Against the two headings of table 19, <i>insert</i> the letters in brackets such as '(a)' & '(b)' respective.
15.	48	In para 18.4, line 11 from top, <i>for</i> 'owing' <i>read</i> 'owning'
16.	51	In table 20, Item No. 11 under A Estates the matter under cols. 2 to col. 8, <i>viz.</i> 'Vaikundam.....935.99' to <i>read</i> against '11. The Vaikundum Rubber Co. Ltd.'
17.	51	The figures indicated in the last col. against item 11 of A. Estates, <i>viz.</i> '778.48' & '807.59', to <i>read</i> against 'Simple Average' & 'Weighted Average' respectively.
18.	52	The fullstop (.) at the end of '4. General charges including' to <i>be deleted</i> .
19.	61	In table 26 The figures shown against sub-items under II. Small holdings, <i>viz.</i> 111.72, 78.94, 60.12, 35.37, 71.54 57.95 to <i>read</i> under the year 1964-65. The figures of 99.69, 88.76, 35.55 40.84, 33.90, 59.75, 56.84 to <i>read</i> under the year 1965-66.
20.	71	In para 21.4, the fullstop (.) at the end of line 8 from top may <i>be deleted</i> and the word at the beginning of line 9 from top may <i>be read</i> as 'an', <i>for</i> 'An'
21.	93	<i>Insert</i> an asteric before No. 11, under 'Consumers of Rubber etc.'
22.	100	Appendix III against, No. 9 under 'A. PRODUCERS', <i>for</i> 'Manavati' <i>read</i> 'Nanavati'
23.	101	Under col. 2 against No. 10 under 'B. PRODUCE ASSOCIATIONS', <i>for</i> 'Planters,' <i>read</i> 'Planters'

REPORT ON THE FIXATION OF RAW RUBBER PRICES

CHAPTER I

Introductory

1.1. The Government of India in the Ministry of Commerce by their letter No. 16(2) Plant(B)/65, dated 28th October 1966, have requested us, under section 12(d) of the Tariff Commission Act, 1951, to enquire into the cost of production of raw rubber and furnish our recommendation/report thereon within a period of two months, if at all practicable *vide* Appendix I. The time limit was not practicable and we submit this report with such expedition as the amount of work involved has permitted.

1. Genesis of the case

1.2. A comprehensive survey of the prices of raw rubber till 1959 is given in the Commission's Report (1960) on the Revision of Raw Rubber Prices. The statutory price of R.M.A. 1 grade raw rubber inclusive of the cess was fixed by the Government at Rs. 155.75 per 100 lbs. after a consideration of its Report.

1.3. The Commission's recommendation was that the price of R.M.A. 1 grade rubber should be fixed at Rs. 146 per 100 lbs. or Rs. 160.94 per 50 kilograms, F.O.B., Cochin, exclusive of sales tax and cess. It also recommended that the prices for other grades (except preserved latex) should be fixed according to the grade differentials then in force. These prices should, the Commission suggested, remain in force upto 30th September, 1963. In announcing their decision on our Report, Government took the view, *vide* their Resolution No. 16(4)-Plant(B)/60, dated the 23rd August 1960, that there was an imperative need to increase the production of raw rubber in the country by undertaking replantation on a large scale, and that because of the widening gap between production and consumption any reduction in the price of raw rubber however small it might be, would have unhealthy repercussions on the industry. Government, therefore, did not consider it desirable to implement the Commission's recommendation in regard to the price of rubber which thus continued to be maintained at Rs. 149.50 per 100 lbs. or Rs. 164.80 per 50 kgs. f.o.b. Cochin, exclusive of the cess for R.M.A. 1 grade. The statutory price inclusive of the cess continued to remain at Rs. 155.75 per 100 lbs.

1.4. Until December 1963, minimum and maximum prices of various grades of natural rubber, were fixed by Government from time to time on the Commission's recommendations. Following, however, Government's decision to abolish price control over 12 commodities including natural rubber, the control on prices of rubber was withdrawn on 16-12-1963. At the time of decontrol, the minimum and maximum prices were Rs. 3,230 and Rs. 3,252 per tonne respectively for grade 1 rubber. Immediately after the decontrol, the Rubber Board strongly urged the desirability of protection to the rubber growers, especially the small growers, against a fall in prices below the minimum prices previously in force. The minimum prices for various grades which were in force before 16-12-1963 were brought back into force on 19-12-1963.

1.5. Prices remained constant round about Rs. 3,250 per tonne f.o.b. Cochin from December 1963 till June 1965 when they showed an upward tendency. From January 1966, however, they rose sharply and reached a peak of Rs. 6,700 per tonne in June, July and August 1966. However, there was a surprising fall in March 1966 to Rs. 4,870 per tonne the causes for which could not be ascertained. The increases were evidently due to lack of imports arising out of foreign exchange difficulties and consequent shortage of rubber. Suggestions appear to have been made to the Government by the manufacturing industry that control should be re-imposed. This reference to us has been the result.

2.1. Departing slightly from our usual procedure, we considered it desirable to have preliminary exploratory talks with the various interests in rubber to select the issues needing consideration. On 17th November, 1966, we met at Bombay the Rubber Production Commissioner, representatives of the Rubber Board, Kottayam and representatives of the United Planters' Association of Southern India. One of the important matters for discussion with them was the selection of estates and small holdings for costing. We held similar talks with the representatives of the Indian Rubber Industries' Association, Bombay and the Association of Rubber Manufacturers in India, Calcutta on 2nd December, 1966. These Associations were subsequently asked to submit their memoranda on such issues as have a bearing on the interests of the manufacturers of rubber goods.

2. Action taken
on reference
and method of
inquiry

2.2. A press communiqué was issued on the 6th December 1966, inviting those interested in the inquiry to obtain copies of the relevant questionnaires and send their replies or views by the 5th January 1967. The Directorate General of Technical Development (D.G.T.D.) was approached for a memorandum on the overall position of the rubber industry in the country. The State Governments of Kerala, Madras and Mysore and the Chief Commissioner of Andaman and Nicobar Islands were asked to furnish information on the present position and problems of the rubber industry in their respective regions. Information regarding the Indian standard specifications for raw rubber and grading of rubber was sought from the Indian Standards Institution, Delhi. Data regarding synthetic rubber were elicited from Synthetics and Chemicals Ltd., Bareilly. Trade representatives of the Government of India in the rubber growing countries such as Malaysia, Indonesia, Ceylon and Thailand were requested for information on the present position of the rubber industry and the f.o.b. quotations for rubber in those countries. A list of estates, other rubber growers, consumers, producers and consumers' associations, Government Departments and individuals to whom our questionnaires/ letters were issued and from whom replies/memoranda were received is given in Appendix II.

2.3. Since the preliminary discussions revealed that the interests of small growers *i.e.*, rubber plantations of less than 20 hectares (50 acres) would need special attention during the course of the current enquiry, on account of the vast expansion of cultivation in holdings of this size, we considered it desirable to hold a few sessions with representatives of this sector. We, therefore, visited Kottayam and Trivandrum between 29th March and 2nd April 1967. At Kottayam we had discussions with representatives of the Chittirathirunal Rubber Planters' Co-operative Society, Meenachil Taluk Rubber Planters' Co-operative Society, the Kerala Cherukida Rubber Planters' Karshak Sangam, the Kanjirapalli, Palai, Ponkunnam Co-operative Societies, the Kottayam, Thodupuzha, Muvathupuzha and Monipally Co-operative Marketing Societies, the Changanur Taluk Rubber Karshaka Co-operative Society and the Cannanore District Rubber Growers' and Market Association. We also met representatives of the Swatantara Party and Kerala Congress, and a few individual planters at their request. We met representatives of the UPASI and Associated Planters of Kottayam also. We visited the Rubber Research Institute, and

a few plantations big and small. We also had a meeting with the Rubber Board. At the request of the Government of Kerala we visited Trivandrum and held discussions with the Minister for Agriculture and Electricity and officers of the Kerala State Government.

2.4. A public inquiry was held in our office at Bombay on the 5th and 6th April, 1967. A list of those who attended the public inquiry and tendered evidence is given in Appendix III.

2.5. Our Cost Accounts Officers examined the costs of production of eleven estates and five small holdings. Regarding the selection of the units for cost examination we make some observations later in this Report. We had discussions with representatives of the costed estates and one of the small holdings also to give them an opportunity to examine and comment on the figures arrived at and to clarify matters needing elucidation. The remaining four small holdings were invited to a discussion on their ascertained costs, but did not avail themselves of the opportunity to do so.

3.1. A feature of the present inquiry is the selection of small holdings for the purpose of settling the cost structure.

3. Selection of units for costing

We made the selection in consultation with the Rubber Production Commissioner and the representatives of the UPASI. The rubber growing areas in the Indian Union, excluding the Andaman & Nicobar Islands, can be broadly classified into six regions on the basis of agro-climatic conditions. These are :

- (1) The Kanyakumari region with moderate and evenly distributed rainfall (1900 mm) and soil which is comparatively fertile and has good moisture holding capacity.
- (2) The Mysore Region (rainfall 2100 mm—2600 mm) characterised by extreme winter and summer seasons, a weak north-east monsoon and a pronounced drought period.
- (3) Malabar Region with heavy rainfall (3200 mm—3400 mm), the south-west monsoon being the predominant one and with soil poor in plant nutrients.
- (4) Mooply and Trichur Region with comparatively lower rainfall, high summer temperature, but soil well supplied with plant nutrients.

- (5) Mundakayam-Kanjirapally-Thodupuzha region with high rainfall (3600 mm—4500 mm), mainly south-west monsoon, and lateritic soil comparatively poorer in plant nutrients.
- (6) Punalur-Pathanapuram region with more rainfall (2000 mm—3000 mm), than Kanyakumari and Mysore, and soil conditions better than Mysore but not so good as Kanyakumari.

3.2. The eleven estates selected by us cover all the six regions. The Rubber Board had initially suggested that 23 estates should be costed but with limitations of both time and cost accounting staff we decided to restrict the number to 11. Of these 11, two estates (Mundakayam and Boyce) have been split out of one estate costed in 1959. A majority of these estates was costed in 1959 and this has assisted us to review the effects of new plantation and re-plantation on trends in costs. One conclusion would appear to be that with proper manuring with artificial fertilisers, differences in soil even out.

3.3. It was represented to us that considering the large increase of rubber acreage in holdings under 20 hectares (50 acres) in size some kind of assessment of the sector was necessary for a proper appreciation of the cost structure. During the commissions inquiries of 1952 and 1959 it was found that small growers were either not co-operative with the Cost Accounts staff or had no accounts or data which could be relied on for any safe conclusion. In 1959 the Commission selected two holdings for cost examination but the proprietors of these, though educated and knowledgeable, did not evince any interest in the Commission's investigation. Our experience on the present occasion has been happier. We initially selected three out of eight holdings suggested by the Rubber Board but did not get any response from the owners. An approach to the remaining five also failed. A second selection was then made by the Rubber Board and with this we were more fortunate. We located five holdings which had accounts, and whose owners were willing to assist us. One of these holdings, is in the Mundakayam area and four in the Punalur-Pathanapuram area. We should have liked to investigate a few more, but in spite of efforts at all our meetings with small holders, to secure some

more material, we were offered nothing more than mere oral estimates. The cost figures collected from the five holdings were reliable despite some gaps and deficiencies which our Cost Accounts staff could cover or correct after enquiry on a fair basis.

3.4. The total number of units costed has, therefore, increased from 12 during the 1959 inquiry to 16. The coverage of the costing of the estates is approximately 6 per cent of all production, and 10 per cent of the production of estates by weight of rubber.



CHAPTER 2

Present position of the rubber industry

4.1. The Report (1951) of the Indian Tariff Board on the prices of Raw Rubber and Protection and Assistance to the Rubber Plantation Industry has given a comprehensive survey of the rubber plantation industry in the country. The industry which started with experimental plantation towards the

4. Progress of the industry.

close of the 19th century was taken up on a large scale only from 1902. It received a set-back during the depression of 1929-30 but recovered during the Second World War. The Indian Rubber Board was set up in 1947 under the Rubber Production and Marketing Act, 1947, to look after the development of the industry. The production of natural rubber in 1950 was 15,849 tonnes. The Report (1952) of the Tariff Commission on the Revision of Prices of Raw Rubber takes the survey upto 1952 and the next Report (1961) upto 1959. The production in 1958 was 24,717 tonnes.

4.2. During the last seven years there has been impressive progress in the industry. Production stood at 37,200 tonnes in 1963 and 50,530 tonnes in 1965-66. It may well be over 55,000 tonnes in 1966-67. Later in this Report we have some observation to make on these figures. There is, however, a gap in the requirements, of the manufacturing industry in the country which is made up by indigenous synthetic rubber and indigenous reclaimed rubber and the import of natural, synthetic and reclaimed rubber.

4.3. *Number of estates and holdings.*—The total number of rubber estates and holdings in India in 1960-61 was 57,721 out of which 547 were estates of above 20 hectares (50 acres) and the rest were holdings of 20 hectares (50 acres) and below. By March 1966 the number of registered units went upto 76,140—the estates above 20 hectares (50 acres) in size being 636 and of small holdings 75,504.

4.4. *Plantation Corporation of Kerala Ltd.*—Since our last inquiry, a public sector undertaking centrally financed called the Plantation Corporation of Kerala Ltd., has been set up for the

TABLE 1

Classification of registered units according to size in 1960-61 and in 1965-66

Classification	1960-61			1965-66			Percent- age increase/ decrease in units	Percent- age increase/ decrease in Area
	No. of units	Area Hectares	Acres	No. of units	Area Hectares	Acres		
<i>Small Holdings :</i>								
2 hectares (5 acres) and below	49,636	38,339	94,739	65,477	51,433	127,093	31.91	34.15
Above 2 hectares (5 acres) and upto and including 4 hectares (10 acres) . . .	4,660	13,982	34,551	6,175	18,251	45,099	32.51	30.53
Above 4 hectares (10 acres) and upto and including 20 hectares (50 acres) . . .	2,878	24,054	59,438	3,852	32,181	79,522	33.84	33.79
TOTAL . . .	57,174	76,375	188,728	75,504	101,865	251,714	32.06	33.37
<i>Estates :</i>								
Above 20 hectares (50 acres) and upto and including 40 hectares (100 acres) . . .	271	7,590	18,755	325	9,555	23,612	19.93	25.90

Above 40 hectares (100 acres) and upto and including 202 hectares (500 acres)	216	17,811	44,011	248	20,476	50,597	14.81	14.96
Above 202 hectares (500 acres) and upto and including 405 hectares (1000 acres)	29	8,082	19,971	30	8,551	21,130	3.45	5.80
Above 405 hectares (1000 acres) and upto and including 607 hectares (1500 acres)	18	8,768	21,667	19	9,424	23,288	5.56	7.48
Above 607 hectares (1500 acres) and upto and including 809 hectares (2000 acres)	5	3,437	8,493	4	2,696	6,663	(—)20.00	(—)21.55
Above 809 hectares (2000 acres)	8	7,842	19,377	10	12,169	30,070	25.00	55.18
TOTAL	547	53,529	132,274	636	62,848	155,300	16.27	17.41
GRAND TOTAL	57,271	129,905	321,002	76,140	164,712	407,014	32.95	26.79

development of natural rubber in implementation of a recommendation of a Working Group for Rubber of the Planning Commission. The issued capital is Rs. 3.05 crores. The Corporation owns 6,273 hectares (15,500 acres) of land of which it has planted 5,714 hectares (14,119 acres) with rubber, almost all of high yielding varieties. About half the extent is covered by T.J.R.I. clonal rubber which at present is the most easily available high yielding variety in the country, though superior varieties have been evolved abroad during the last few years. The Corporation's proposal for the fourth plan includes an additional 4.047 hectares (10,000 acres) of rubber.

4.5. The area under rubber in various States is as given in the table below:

TABLE 2
Area under rubber in various States

Name of the State	No. of holdings	Area in Hectares	No. of Estates	Area in Hectares	Total area in Hectares
Kerala . .	74,445	98,992 (244,614 acres)	581	55,885 (138,096 acres)	154,877 (382,710 acres)
Madras . .	1,032	2,690 (6,648 acres)	41	5,130 (12,676 acres)	7,820 (19,324 acres)
Mysore . .	25	159 (392 acres)	11	1,597 (3,945 acres)	1,755 (4,337 acres)
Andamans . .	..	..	3	236 (583 acres)	236 (583 acres)
Maharashtra . .	1	16 (39 acres)	..	..	16 (39 acres)
Tripura . .	1	8 (20 acres)	..	..	8 (20 acres)

4.6. *Registered and tappable areas.*—Of the total registered area of 1,29,905 hectares (321,002 acres) in 1960-61, 46,554 hectares (115,037 acres), i.e., 36 per cent, was planted with high

yielding rubber. The tappable area in that year was 70,253 hectares (173,600 acres), out of which 15,864 hectares (39,200 acres), i.e., 23 per cent, was planted with high yielding material. In 1965-66 of the registered area of 1,64,712 hectares (407,014 acres), 82,608 hectares (204,128 acres) (i.e. 50 per cent) were planted with high yielding rubber. Of the tappable area of 1,12,705 hectares (278,500 acres) 43,058 hectares (106,400 acres) (i.e., 38 per cent) were planted with high yielding varieties. The comparable position according to area in the years 1960-61 and 1965-66 is given in Table 4.

4.7. *Average yield per acre.*—The following table shows the progressive increase in yield per hectare (acre) from 1960-61 to 1965-66:—

TABLE 3
Progressive increase in yield

Year	Yield	
	(kgs. per hectare)	(lbs. per acre)
1960-61	365	326
1961-62	371	330
1962-63	383	342
1963-64	393	350
1964-65	421	375
1965-66	448	400

According to the Rubber Board, the average yield per hectare in 1960-61 on estates above 20 hectares (50 acres) was 494 kgs. per hectare (440 lbs. per acre) compared to 208 kgs. per hectare (185 lbs. per acre) for small holdings of 20 hectares (50 acres) and below. In 1965-66 the corresponding yield increased to 699 kgs. per hectare (624 lbs. per acre) and 294 kgs. per hectare (262 lbs. per acre). These figures are based on returns of production from the estates and estimates made by officers of the Board in the case of holdings.

Registered area, Tappable area, Production and Average yield of rubber in 1960-61 and 1965-66

Particulars	ESTATES Above 20·23 hectares (50 acres)		HOLDINGS 20·23 hectares (50 acres and below)			TOTAL	
	Ordinary	High yielding	Total	Ordinary	High yielding in hectares	Total	High yielding
Registered Acreage .	29,719	23,811	53,529	53,632	22,743	76,375	46,554
	(73,436)	(58,838)	(132,274)	(132,529)	(56,199)	(188,728)	(115,037)
Tappable Acreage .	25,532	13,228	38,760	28,869	2,638	31,506	15,866
	(63,092)	(32,687)	(95,779)	(71,336)	(6,518)	(77,854)	(39,205)
Production (M. Tonnes) Yield . . . . .	..	..	19,169	..	..	6,528	..
(a) kgs. per hectare . .	..	..	178	..	..	75	..
			(440)			(185)	
(b) lbs. per acre .							
Registered Acreage .	24,169	38,679	62,848	57,936	43,929	101,865	82,608
	(59,723)	(95,577)	(155,300)	(143,163)	(108,551)	(251,714)	(204,128)

Tappable Acreage	21,929 (54,188)	21,228 (52,456)	43,157 (106,644)	47,704 (117,885)	21,844 (53,979)	69,551 (171,864)	69,635 (172,073)	43,073 (106,435)	112,706 (278,508)
Production (M. Ton- nes)	..	..	30,106	..	..	20,424	..	..	50,530
(a) Yield per Hec- tare (kgs.)	..	..	699	..	..	294	..	..	448
(b) Yield per Acres (lbs.)	..	..	624	..	..	262	..	..	400

Figures in brackets are acres.

These figures compare with an average of 628 kgs. per hectare (560 lbs. per acre) of Ceylon and 917 kgs. per hectare (817 lbs. per acre) of Malaysia for estates of over 40 hectares (100 acres).

4.8. Table 4 on pages 12 and 13 shows the registered area, tapable area, production and average yield in the years 1960-61 and 1965-66.

4.9. One feature of the increase in production is that over 75 per cent of the increase in area is in holdings of 20 hectares (50 acres) and below and that though a substantial part of the increase of production is in the estate sector, prospects for the immediate future are brighter in the small scale sector. An important consideration in the fixing of prices is, therefore, the progress of this sector. Whilst in 1960-61 holdings represented 44 per cent of the area and a little over 20 per cent of the production, in 1965-66 corresponding figures were 60 per cent and 40 per cent. The reasons for the increase of area in the small holdings sector would appear to be three fold:—(i) the attractiveness of rubber prices, (ii) propaganda by the Rubber Board, and (iii) the effort of large land holders to escape the land ceiling legislation from which plantations are exempt. However, it is important to observe that while the expansion by area in the estates sector is small, possibly on account of difficulties in acquiring large areas of land, and uncertainties of the future, the average yield per hectare/acre has gone up substantially in all estates due to plantation and re-plantation with improved varieties of rubber. In fact out of the increase of production of 25,000 tonnes between 1960-61, and 1965-66, the estates despite the small increase in their area, accounted for 11,000 tonnes.

4.10. *Estimates of production.*—At this stage we would wish to make an observation on the statistics of area and yield which is of some significance. As stated earlier, whilst the figures relating to registered area of holdings are likely to be reliable, the estimates of yield are unlikely to be so. Under the provisions of Rule 43 of the Rubber Production and Marketing Rules 1955, every small grower when required to do so, and every large grower and every licensed dealer, must submit to the Rubber Board a true and correct monthly return of raw rubber held, produced or acquired or disposed of in forms H and L. These forms provide for particulars under numerous columns for statistics of produce, stores and disposal of rubber. The Rubber Board have not so far enforced the provisions with regard to the collection of such data

from small growers who in terms of Rule 2 are owners whose holdings do not exceed 20 hectares (50 acres) in area. Thus this information is available only from the estates, *i.e.*, plantation covering an area of 20 hectares (50 acres) and more. The Rubber Board has in reply to our questionnaire stated that it has found it difficult to collect production figures from a large number of units and, therefore, makes estimates using indirect methods. Under the provisions of Section 12 of the Indian Rubber Act, 1947, the Rubber Board is entitled to a cess which is now collected at the rate of Rs. 30 per 100 kgs. of rubber produced. On sole crepe this cess is collected from producers, in respect of all other grades from manufacturers on the basis of their purchases of indigenous raw rubber. The quantity of sole crepe produced in 1965-66 was only 84 tonnes and accounts for a very small fraction of the total quantity of rubber produced on which the cess due for 1965-66 was more than 15.1 million rupees. The bulk of the cess was thus assessed on and collected from manufacturers.

4.11. The quantity of rubber declared for the purpose of payment of cess is the only means available to the Rubber Board for estimating rubber production. The other data available with the Board are in respect of such information as is furnished by the estates which produce about 60 per cent of the total quantity of rubber. The only way in which the figures of production of the small growers can be estimated is to deduct from the quantity of rubber declared for the payment of cess, the quantity reported or estimated to have been produced by the large growers. The total tappable area of the estates in 1965-66 was 43,157 hectares (106,644 acres) and that of the holdings 69,551 hectares (171,864 acres). Under ordinary varieties, the estates held an area of 21,929 hectares (54,188 acres) and the holdings 47,706 hectares (117,885 acres), the latter having more than double the area of the estates. In the high yielding varieties, the estates had an area of 21,228 hectares (52,456 acres) and the holdings 21,844 hectares (53,979 acres) which is a little more than the former. The yield from the estates from both ordinary as well as high yielding varieties was 30,106 tonnes in 1965-66, while the yield from holdings which cover more than double the area of ordinary rubber and a little more than the area of high yielding varieties in the estates was estimated by the Board at only 20,424 tonnes. It has been variously estimated that the yield from high yielding varieties is between 897 kgs. per hectare (800 lbs. per acre) and 1121 kgs. per

hectare (1,000 lbs. per acre) and that from the ordinary varieties about one-half of this figure. In the case of estates, therefore, about two-thirds can be assumed to be the production of high yielding varieties and only about one-third of the ordinary varieties. This works out on an average to about 953 kgs. per hectare (850 lbs. per acre) from the high yielding varieties and about 477 kgs. per hectare (425 lbs. per acre) from the low yielding varieties. If it is assumed that in the case of holdings too the yield from improved varieties is double that of ordinary rubber trees, the average for holdings works out to 446 kgs. per hectare (398 lbs. per acre) for improved varieties and 224 kgs. per hectare (199 lbs. per acre) for ordinary varieties. There is no technique involved in the cultivation of rubber trees and the production of rubber which may provide any extraordinary advantage to large holdings. The only factors which are likely to be favourable are better organisation and management available to the estates. There is no additional or special process employed by the estates which may give them an advantage to account for a yield of double that of the holdings. At the expected rate of yield the estimated total production of the holdings should have been obtained only from the high yielding varieties. Since areas under low yielding varieties would also have produced a substantial quantity of rubber, the estimates of total production of holdings are clearly unreliable. It is, therefore, necessary to seek reasons for this. During the last ten years, the area under rubber has almost doubled; it has gone up from 83,867 hectares (207,239 acres) to 164,712 hectares (407,014 acres) between 1955-56 and 1965-66. The most significant increase has been registered under holdings, the area of which went up from 36,288 hectares (89,670 acres) to 101,865 hectares (251,714 acres) for the same period. The figures of area reported for holdings for the period from 1959-60 to 1965-66 are as follows:—

TABLE 5
Area under holdings
(Acres in brackets)

	In hectares		Remarks
	Ordinary	Budded & clonal	
1. Total area under rubber in 1965-66.	57,936 (1,43,163)	43,929 (1,08,551)	

TABLE 5—*contd.*

(Acres in brackets)

	Ordinary	In hectares		Remarks
			Budded & clonal	
2. Newly planted area from 1959-60 to 1965-66.	9,158 (22,631)	16,713 (41,300)		
3. Replanted area from 1959-60 to 1965-66	87 (215)	5,371 (13,272)		
4. Total of items 2 and 3 .	9,245 (22,846)	22,084 (54,572)		
5. Area evidently not available for tapping.	984* (2,432)			*This figure has been calculated by us.
Balance	47,706 (1,17,885)	21,844 (53,979)		

The period of maturity of a rubber tree is between six and eight years, and the figures for mature area are evidently derived by deducting the area planted or replanted between 1959-60 and 1965-66 from the total registered area. During the three preceding years, 30,057 hectares (74,272 acres) were planted and 1635 hectares (4040 acres) replanted making a total of 31,692 hectares (78,312 acres) out of which 16,614 hectares (41,053 acres) had ordinary plants and the remaining 15,078 hectares (37,259 acres) improved varieties. It is probable that a considerable area out of this may not have started yielding rubber until 1965-66. Insufficient attention to tending and manuring of plantations, lack of adequate disease-control measures and partial waste in collection and handling of latex resulting from handicaps inherent in holdings of small size could account for a small loss in production. Nevertheless, we are of the view that the Rubber Board's estimates of an average yield of 294 kgs. per hectare (262 lbs. per acre) in the small holdings sector is definitely an under-estimate. It is also possible that some rubber produced by the small growers escapes assessment of cess. Discrepancies, therefore, on both the counts *i.e.*, in accurate figures of mature area as well insufficient data of the actual yield from holdings are responsible for under-estimates of yields. We suggest that a census of actual area under rubber with special reference

to mature area should be under-taken by the Rubber Board with the assistance of revenue authorities in order to make more reliable data available. It may also be desirable to devise more stringent measures of checking transactions by dealers to ensure not only the correct data of production but also the assessment of the cess actually due.

5.1. At the end of 1965-66 the area replanted with improved material was 22,362 hectares (55,259 acres). In its last Report the Commission estimated the costs of replantation at Rs. 16 per 100 lbs. at the then current costs. A sum of Rs. 9 was covered by the depreciation element in the recommended price of rubber, and the balance of

**5. Replanting subsidies
& Assistance.**

Rs. 7 proposed to be levied as a development cess to be recovered from consumers for grant of subsidies by the Rubber Board to implement its programme for rehabilitation of plantations. The splitting up of the costs of replanting was deliberately devised to obviate misutilisation of the rehabilitation element in the price by small growers. The subsidy was to be available to estates and holdings alike.

5.2. The Board launched its Replanting Subsidy Scheme in 1957, with a target of 28,328 hectares (70,000 acres) for 10 years and subsidies ranging from Rs. 803 per hectare (Rs. 325 per acre) to Rs. 988 per hectare (Rs. 400 per acre) for small growers, and Rs. 618 per hectare (Rs. 250 per acre) to Rs. 741 per hectare (Rs. 300 per acre) for estates. The actual replanted area between 1957 and 1959 was 4452 hectares (11,000 acres) and fell short of the target of 8,498 hectares (21,000 acres). The Scheme was, therefore, revised in 1960 and the subsidy enhanced to Rs. 2,471 per hectare (Rs. 1000 per acre) uniformly of which a sum of Rs. 988 per hectare (Rs. 400 per acre) is paid in the first year in arrears, and the balance at the rate of Rs. 247.00 per hectare (Rs. 100 per acre) per year over the next six years. Replanting then received a fillip as shown by the figures as shown in table 6 on page 19. The target for the current Five Year Plan is 20,234 hectares (50,000 acres) and, is capable of achievement judging from the tempo of the last two years. At any rate, every effort should be made to reach and even exceed it. The sum disbursed as subsidy to the end of 1965 was Rs. 2.71 crores. Areas replanted in 1957/59 have already come under tapping and are said to be yielding 1121 kgs. per hectare (1000 lbs. per acre), even in the second year of tapping.

TABLE 6
Progress of replanting subsidy scheme since 1960-61

Year	Small holdings 20 hectares (50 acres) & below		Estates Above 20 hectares (50 acres)		Total		Subsidy* paid Rs.
	No. of units	Area replanted	No. of units	Area replanted	No. of units	Area replanted	
1960-61	568	688 (1700.52)	48	590 (1458.89)	616	1,279 (3159.41)	13,11,677
1961-62	903	1096 (2708.84)	87	1175 (2902.64)	990	2271 (5611.48)	26,29,519
1962-63	890	1078 (2663.58)	77	1185 (2928.47)	967	2263 (5592.05)	32,06,718
1963-64	625	807 (1993.68)	78	1277 (3155.24)	703	2084 (5148.92)	53,68,271
1964-65@	632	747 (1846.25)	91	1783 (4404.93)	723	2530 (6251.18)	52,45,597
1965-66@	735	936 (2311.85)	106	2282 (5638.84)	841	3218 (7950.69)	62,77,382
1966-67@	22	67 (165.90)	16	497 (1227.06)	38	564 (1392.96)	14,50,612

*Separate figures for estates and holdings are not available.

@ Figures are incomplete.

Figures in brackets are acres.

5.3. At today's costs, the Rubber Board estimates that replantation charges would be Rs. 6,832 per hectare (Rs. 2,765 per acre) for the first seven years, after which a tree would be ready for its first tapping. This may be broken up into about Rs. 2,224 per hectare (Rs. 900 per acre) for the first year, and Rs. 680 per hectare (Rs. 275 per acre) to Rs. 815 per hectare (Rs. 330 per acre) for each of the next six years. Of these amounts about Rs. 791 per hectare (Rs. 320 per acre) during the first year, and Rs. 371 per hectare (Rs. 150 per acre) during each of the next six years represent the cost of labour. The figure for the first year includes Rs. 865 per hectare (Rs. 350 per acre) for the best planting material, but when the T.J.R.I. clone, which is more easily available, is used, the cost of planting material would drop to Rs. 198 per hectare (Rs. 80 per acre) and the total replantation costs to Rs. 6,165 per hectare (Rs. 2,495 per acre). These figures tally closely with a few accounts shown to us, including the St. Ephream's Church Estate, Palai, a holding of one acre, which we visited on the 30th of April, 1967. Since planting materials are supplied free of costs to holders and fertilisers at 50 per cent of the market prices the present subsidy for replanting seems to us to be fair. In addition small holders get an adequate grant for soil conservation works. The only criticism could be that subsidy is paid in arrears, and that the small holder would have to find the funds for purchases in the first instance, and also maintain himself whilst contributing his labour to the cultivation of his holding.

5.4. We may mention in passing that the small grower also receives the following types of assistance from the Rubber Board.

- (1) Loans at the rate of Rs. 3,459 per hectare (Rs. 1,400 per acre) for expanding their holdings to a minimum of 2 hectares (5 acres) and maximum of 20 hectares (50 acres).
- (2) Loans at the rate of Rs. 2,224 per hectare (Rs. 900 per acre) for the maintenance of immature areas up to 6 hectares (15 acres).
- (3) Demonstration of cultivation and processing.
- (4) On the spot advisory services.
- (5) Training in scientific tapping.

6.1. We have made a brief survey of the financial position of the rubber plantation industry. For this purpose, the balance sheets of 15 public limited companies operating rubber estates which have reported to us were analysed for the period from 1961-62 to 1965-66. These companies were engaged wholly or primarily in production of rubber. The working results of these Companies may, therefore, be taken broadly to represent the industry as a whole.

**6. Financial Position
of the rubber plant-
ation holdings.**

6.2. The salient features of the analysis are that during the period from 1961-62 to 1965-66 the value of gross fixed assets used in the business of the fifteen companies increased from Rs. 436.79 lakhs to Rs. 502.10 lakhs. The investment in fixed assets was largely financed from internal sources and to some extent from borrowings. The paid up capital of the companies increased from Rs. 274.82 lakhs in 1961-62 to Rs. 278.82 lakhs in 1965-66 and reserves and surplus also increased from Rs. 114.47 lakhs to Rs. 187.99 lakhs. The networth increased from Rs. 389.29 lakhs to Rs. 466.81 lakhs. The borrowings rose slightly from Rs. 19.57 lakhs in 1961-62 to Rs. 19.96 lakhs in 1965-66. The capital employed was mostly in the net value of fixed assets which constituted 92.8 per cent in 1961-62 and 96.2 per cent, 95.00 per cent, 93.9 per cent and 89.3 per cent in 1962-63, 1963-64, 1964-65 and 1965-66 respectively. This shows that the part of net assets in the capital employed declined continuously after 1962-63. The percentage of networth to capital employed has more or less remained the same but the percentage of borrowings to capital employed has fallen from 5.1 per cent in 1961-62 to 4.4 per cent in 1965-66, although the latter percentage showed a slight increase over that of 1964-65. The networth of the companies taken into consideration is more than the capital employed and the amount of borrowings is comparatively little, (only 4.4 per cent in 1965-66). On the whole, the financial position of the companies as revealed by the analysis is sound, and in particular the ploughing back of Rs. 73.52 lakhs of profits, constituting as much as 25% of the paid up capital is a matter for satisfaction.

6.3. As regards the operating results during the period under review, the realisations from sales increased progressively from Rs. 252.27 lakhs in 1961-62 to Rs. 309.18 lakhs in 1965-66. The return from the business in rubber in the sense usually adopted by us was obtained from the profit and loss accounts by adding back

the interest charges, managing agents' remuneration and provision for taxation and deducting there from the income from sources other than rubber. Profits were thus arrived at Rs. 64.12 lakhs in 1961-62, Rs. 53.75 lakhs in 1962-63, Rs. 67.13 lakhs in 1963-64, Rs. 66.71 lakhs in 1964-65 and Rs. 88.00 lakhs in 1965-66. The return on capital employed dropped from 16.6 per cent in 1961-62 to 13.8 per cent in 1962-63 but later it increased to 19.2 per cent in 1965-66. Net profits which were arrived at after allowing for actual interest charges and managing agents' remuneration stood at Rs. 57.45 lakhs in 1961-62 and at 48.21 lakhs in 1962-63 but from 1963-64 to 1965-66, continuously went up and reached Rs. 81.60 lakhs in 1965-66. Provision for taxes worked out to Rs. 31.78 lakhs in 1961-62, Rs. 21.39 lakhs in 1962-63, Rs. 30.71 lakhs in 1963-64, Rs. 27.29 lakhs in 1964-65 and Rs. 41.48 lakhs in 1965-66. Net profits worked out to 14.8 per cent in the year 1961-62 and ranged between 12.2 per cent and 17.5 per cent in the next four years as percentage of capital employed. Related to the actual paid-up capital the net profits worked out to 23.3 per cent in 1961-62 and ranged between 17.3 per cent and 29.3 per cent in the subsequent years. From the net profits after taxes, the proportion distributed as dividend was 89.6 per cent in 1962-63, but continuously declined in the following years and came to 69.1 per cent in 1965-66. The dividend actually paid worked out to 9.7 per cent on the paid-up capital in 1961-62, 8.6 per cent in 1962-63, 8.4 per cent in 1963-64, 9.2 per cent in 1964-65 and 9.9 per cent in 1965-66. Thus the above analysis of the profit and loss account *vis-a-vis* the different items of balance sheets shows that during 1965-66, there was a significant increase in the sales and profits of the companies under review and that the corporate sector has worked satisfactorily.

CHAPTER 3

Quality, standards and research

7.1. In its last Report (1960), the Commission observed that there were no serious complaints about the quality of indigenous raw rubber. Though we have received divergent views during our present inquiry, the consensus is that quality is on the whole good, especially in the case of supplies from the larger estates and holdings, which represent over 60/75 per cent of the production. The main complaints are regarding colour, drawing, high ash and foreign matter, dirt and moisture, and so forth, besides attempts to defraud in packing.

7. Quality, grading standards and Research.

7.2. Grading is at present largely visual, and follows world practice, though we understand standards and tests based on scientific laboratory examination are being introduced in Malaya. The Rubber Board has not yet initiated any work in this respect. The Indian Standards Institution has prepared draft standard specifications based on a draft proposal of the International Organisation for Standardisation, which includes a procedure for sampling of raw natural rubber. We hope this scheme will materialise, since the present system of grading and sale gives scope for disputes, if not fraud, and controlled prices may work for or against the seller depending on the availability of supplies in the market, and the relative strengths of buyer and seller.

7.3. For the purpose of our inquiry we intend following the existing standards and grades. In this connection the issue arises as to what the differentials in the prices of grades should be. These have so far been based on market understandings which in turn have merely followed the pattern in the world markets. The question is whether after devaluation of the rupee, the differences between the prices of the grades should not be re-expressed in terms of the new values of the rupee, or in other words increased by 57½ per cent. However, at the public inquiry all interests were of the view that the differentials should be retained as they were. We propose, therefore, to leave them unaltered.

7.4. *Research.*—Though this is a price inquiry, we would make a few observations on the subject of research in the industry in

view of its relevance to productivity & effect on costs of production. The Rubber Research Institute founded in 1955 has expanded its activities both in the field of rubber growing as well as in that of rubber technology. The Rubber Production Commissioner is the Director of the Institute. He is in overall charge of the Research Institute which consists of Research, Extension of Publicity Wings.

7.5. The Research Wing consists of four sections *viz.*, Agronomy, Botany, Plant Pathology and Chemistry/Rubber Technology. Research work in the Agronomy Division is essentially confined to the study and general classification of rubber growing soils and the cultural and nutritional and physiological problems of rubber. The studies include testing of different types of fertilisers, and enquiring into the optimum quantities of each of the plant nutrients required and the method and time of application etc. The Botany Division undertakes research on the improvement of the crop and various other related problems. Of importance is the establishment of new clones through breeding and selection and incorporating desirable characters such as high yield and disease resistance. Experiments on the improvement of techniques of propagation, on tapping, on physiological disorders etc., are also carried out. The Pathological Division investigates the diseases of rubber and effective control measures. The Chemistry and Rubber Technology Division undertakes research on various aspects of latex collection and processing. The Extension Wing functions with the main object of transmitting findings of research to rubber growers in the field and bringing back their problems for an examination of possible solutions. Much available work has been done in the field by way of extension and advisory services of which the most important part has been the distribution of select seeds, clonal seedlings, budded stems and budwood. In 1965-66, for example, 41 lakhs of TJIR seeds were distributed to 3,483 parties besides 3.75 lakhs clonal seedlings, 63,500 budded stumps and 3,000 metres of budwood. Other valuable work has also been done like setting up of approved private nurseries, distribution of sprayers, supplying fertilisers, fungicides, pesticides, formic acid etc. There is a small-holders' advisory service which covers all aspects of rubber cultivation. The public relation activities have included seminars and conferences and exhibitions besides the issue of a Malayalam Monthly magazine which in a State with the literacy of Kerala constitutes a powerful medium for the dissemination of scientific knowledge regarding rubber.

CHAPTER 4

Synthetic and reclaimed rubber

8.1. Since the Commission's last Report a factory for the production of synthetic rubber based on alcohol, Synthetics & Chemicals Ltd., has been set up at Bareilly with a capacity of 30,000 tonnes per annum and production has reached the level of 24,000 tonnes. It is expected that maximum production will be achieved by the end of 1968. This company has proposals to expand capacity to 50,000 tonnes per annum. A proposal for a second factory based on petro-chemicals is stated to be under examination, and its projected annual capacity may be 30,000 tonnes. However, even if set up it is unlikely to go into full production before the middle of the next Plan.

8.2. Whilst some varieties of synthetic rubber are needed for special purpose for which natural rubber is not suited, substitution to the extent of 30,000 tonnes of indigenous synthetic rubber is possible in the course of this Plan, and perhaps double this figure during the next Plan. Synthetic rubber has no special advantages over natural rubber in the manufacture of tyres, and tyre companies appear to prefer not to use more than 10 per cent of the former in the manufacture of tyres. The price of styrene butadiene rubber manufactured at Bareilly now varies between Rs. 217.50 per 50 kgs. of S-570 to Rs. 282.50 per 50 kgs. of S-1958. It, therefore, has no price advantage over natural rubber. Even if economies of scale are secured through expansion of capacity, its price which depends on the price of alcohol, which again is linked with the price of cane and sugar, is not likely to give it an edge over natural rubber in the near future.

9. Some rubber can be reclaimed from scrapped rubber goods. Reclaimed rubber serves as an extender or in other words, as a part substitution of natural raw rubber, and therefore, has to be competitive in price. During the five years from 1960-61, it has been imported to the extent of 2,000/3,000 tonnes per annum. The prices are not known to us, but it is believed that it was cheaper than natural raw rubber. Reclaimed rubber forms an important part of world consumption, its annual

Reclaimed rubber.

production being of the order of 4,06,400 tonnes against an annual world production of 20/23,00,000 tonnes of natural rubber, *i.e.*, nearly 20 per cent. Its production in our country has been at the level of 9,000 tonnes per annum in the recent past, and *future anticipated production* is as follows:—

TABLE 7

	Tonnes
1966-67	12,000
1967-68	14,000
1968-69	17,000
1969-70	21,000
1970-71	25,000

With the increased use of rubber goods and the increase in disposal and obsolescence, this source of rubber may be expected to increase progressively over the years. The figures based on the DGTD's estimates appear to us to be on the high side, judging from past performance, but we have not investigated the matter, and are inclined to the view that availability from this source would only be of the order of 15/20,000 tonnes over the next few years.

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CHAPTER 5

Demand, supply and their regulation

10.1. The demand for rubber continues to expand at a rapid rate. All the four new tyre companies set up since the Commission's last report, which are the largest consumers of raw rubber, have gone into production. Manufacturers of other types of rubber goods have also increased in number and capacity, many in the small scale sector. In 1960 the Commission estimated future demand for natural rubber as against the actual consumption as follows:—

10. Domestic demand.

10.1. The demand for rubber continues to expand at a rapid rate. All the four new tyre companies set up since the Commission's last report, which are the largest consumers of raw rubber, have gone into production. Manufacturers of other types of rubber goods have also increased in number and capacity, many in the small scale sector. In 1960 the Commission estimated future demand for natural rubber as against the actual consumption as follows:—

TABLE 8

Year	Demand estimated in 1960	Actual consumption
	Tonnes	Tonnes
1960-61	40,000	48,148
1961-62	42,700	48,410
1962-63	44,000	53,553
1963-64	45,800	61,155
1964-65	48,800	61,057
1965-66	54,300	63,765

The annual estimated increase of consumption of about 3,000 tonnes has, therefore, much exceeded, the actual average annual increase after 1961-62 being about 5,000 tonnes. The increase in the use of rubber of all types (i.e. including synthetic and reclaimed) are included was, however, even larger. The following table gives, the production, import, and consumption of all kinds of rubber, from 1960/61 to 1965/66:—

TABLE 9

*Production, import and consumption of all kinds of rubber**

(In Metric tonnes)

Year	Production			Import		Reclaim- ed Rubber		Total		Consumption		
	Natural rubber	Synthe- tic rubber	Synthe- tic rubber	Natural rubber	Synthe- tic rubber	Pro- duced or import- ed	Avail- ability (2+3+ 4+5+6)	Natural rubber	Synthe- tic rubber	Re- claimed rubber	Total (8+9+ 10)	
1	2	3	4	5	6	7	8	9	10	11		
1960-61	.	.	23,125	8,097	5,183	62,102	48,148	7,397	5,453	60,998		
1961-62	.	.	22,528	10,121	6,422	66,517	48,410	10,186	6,046	64,642		
1962-63	.	.	23,360	10,297	6,839	72,735	53,553	10,723	6,850	71,126		
1963-64	.	.	26,275	8,812	8,251	88,900	61,155	11,959	7,982	81,096		
1964-65	.	.	15,003	3,315	9,349	84,916	61,057	15,285	9,369	85,711		
1965-66	.	.	16,357	2,735	9,764	94,127	63,765	21,553	9,774	95,092		

*Vide Indian Rubber Statistics (Vol. 9 : 1966).

The imports during the last two years have cost a foreign exchange of over Rs. 15 crores.

10.2. As regards future demands, estimates are somewhat difficult, since the plan for the future expansion of the tyre industry is still not settled and is tied up with numerous difficult issues.

10.3. The *estimates* of the D.G.T.D., the Association of Rubber Manufacturers in India and the Rubber Board, of the requirements of all types of rubber and availability in tonnes are given in table No. 10 on page 30.

The D.G.T.D. has taken into consideration the requirements as well as the availability of reclaimed rubber but the Association of Rubber Manufacturers in India has not mentioned anything about reclaimed rubber and its estimates appear to relate only to natural and synthetic rubber. The Consumers Association has estimated larger deficits than the D.G.T.D. during the first three years of the Plan but much smaller ones during the remaining two years. The Rubber Board have given figures only for the estimated demand for the years 1967-68 and 1969-70 and not for the first and the last year of the Plan. They have not attempted any estimates of production. Their estimates are very much lower than those of either the D.G.T.D. or the Consumers' Association.

10.4. We are inclined to accept the estimates of the D.G.T.D. However, whichever figure is accepted, it is clear that the demand is likely to be of a very high order compared with existing consumption.

10.5. Of the demand, there could of course be an increase in the use of indigenous synthetic (SBR) rubber of more than 10 per cent or so, which tyre companies now prefer to use, but it is agreed on all hands that were natural rubber available, the total use of synthetic rubber could not exceed, say, 33½ per cent of the total requirements, or say, 40,000 tonnes in the last year. At present, natural and synthetic rubber are used in the ratio of 76:24.

TABLE 10

(In tonnes)

Year	D.G.T.D.			Assn. of rubber mfrs.*			Rubber Board		
	Demand	Estimated production	Deficit	Demand	Estimated production	Deficit	Demand	Estimated production	Deficit
1966-67	.	104,000	80,600	14,400	93,000	73,750	19,250	..	..
1967-68	.	118,000	101,000	17,000	111,500	89,750	21,750	110,000	..
1968-69	.	140,000	110,000	30,000	125,500	97,250	28,250	123,000	..
1969-70	.	164,000	128,000	46,000	139,500	106,000	33,500	138,000	..
1970-71	.	188,000	127,000	61,000	153,750	114,000	39,750	..	..

*Figures have been furnished for calendar years from 1962 to 1971. These have been worked out for financial years by adding estimates for the nine months of the previous year to those of the three months of the following year.

11. The D.G.T.D.'s estimates of domestic availability (in tonnes) of natural, synthetic and reclaimed rubber are as under:

TABLE 11

	1966-67	1967-68	1968-69	1969-70	1970-71
Natural rubber	55,000	59,000	63,000	67,000	72,000
Synthetic rubber (SBR)	22,600	28,000	30,000	30,000	30,000
Reclaimed rubber	12,000	14,000	17,000	21,000	25,000
TOTAL	89,600	101,000	110,000	118,000	127,000

These figures were generally accepted by all interests at the public inquiry.

12.1. As indicated in the last paragraph we have had difficulty in estimating the likely shortages of rubber in future years. No targets have been fixed for the consuming industries even for the Fourth Plan, and likely trends for the 4th Plan remain even more uncertain. All that can be done is to make guesses of the probable orders of demand and production, and thereby arrive at some figures of the probable order of shortage. Of these, the figures of production of raw rubber during the current and next Plan periods alone are likely to be approximately correct, since they are based on reliable figures of new plantation and re-plantation during the years 1956-61 to 1961-66.

12.2. The D.G.T.D.'s estimates of shortages (in tonnes) which received general support from all sections at the public inquiry are as follows:—

TABLE 12

	1966-67	1967-68	1968-69	1969-70	1970-71
Deficit					
Natural	11,000	15,500	25,000	35,000	44,000
Synthetic	3,400	1,500	5,000	11,000	17,000
Reclaimed	Nil	Nil	Nil	Nil	Nil
TOTAL	14,400	17,000	30,000	46,000	61,000

The representative of the D.G.T.D. observed at the public inquiry that the world average of the use of synthetic rubber to the total quantity of rubber used was 50 per cent. The ratio between the use as now of natural and synthetic rubber in India is 76:24. We were also informed at the inquiry that in the foreseeable future consumption of synthetic rubber may go up to 33 per cent. However, the break-up given above assumes that 25 per cent of the total rubber used will be synthetic rubber.

Considering that the average annual increase of consumption during the years 1960-61 to 1966-67 was about 7000 tonnes, the anticipated increase per year from 1966-67 onwards of 14,000, 22,000 and 24,000 tonnes may well be on the high side, but even assuming the increased requirements of natural rubber to be at the lower estimates of the Association of Manufacturers as in paragraph 10.3, the shortage from 1970-71 onwards cannot be less than 30,000 tonnes and may be as high as 60,000 tonnes. No new plantations by small-holders, with an average production of 448 kgs. per hectare (400 lbs. per acre) to 674 kgs. per hectare (600 lbs. per acre) or thereabouts could be expected to meet more than a fraction of this shortage. It is, therefore, imperative to contemplate a production of at least 15,000 tonnes, and perhaps as much as 25,000 tonnes in the large scale sector. This at 1345 kgs. per hectare (1200 lbs. per acre) would mean a new area of between 4598 hectares (25,000 acres) and 16187 hectares (40,000 acres) in this sector. The Plantation Corporation of Kerala, which has 5714 hectares (14,119 acres) under rubber today, has plans for an expansion by 4047 hectares (10,000 acres) during the current Plan, but is already in difficulties in finding this area in convenient plots of large size in Kerala. This would mean that steps should be taken immediately to locate a further 6070 hectares (15,000 acres) to 12141 hectares (30,000 acres) elsewhere in the Union. To this we refer in Chapter 6.

13.1. Unlike the general pattern in Government's import policy, there is no quota for import of raw rubber by established importers. Actual users are given licences to import rubber, the total imports being the difference between anticipated consumption and anticipated production. The Rubber Board is consulted on these estimates.

13. Imports and import policy.

Imports were as follows in recent years :

TABLE 13

	Natural Tonnes	Synthetic Tonnes	Reclaimed Tonnes
1960-61	23,125	8,097	3,024
1961-62	22,528	10,121	3,847
1962-63	23,360	10,297	3,538
1963-64	26,275	8,812	3,777
1964-65	15,002	3,315	2,078
1965-66	16,357	2,735	177

Till 1965, it was the policy to maintain a parity between the price of imported and natural raw rubber. The difference between the two was, therefore, collected from the importers and made over into a Pool Fund administered by the Rubber Board for the rehabilitation of small growers and the increase of productivity of their holdings. The position, however, changed with Devaluation when the imported price of rubber, inclusive of duty, became higher than the statutory minimum price in India.

13.2. Due to foreign exchange difficulties, no licences were issued for the import of rubber after July 1965, and until the Devaluation of the rupee on the 6th June 1966. As we have noticed earlier, this was the obvious cause of the heavy increase of rubber prices from August 1965 onwards. As a result of the liberalisation of imports and issue of licenses, the imports went up as the following figures would show :—

TABLE 14

Monthwise Imports of Natural Rubber (in tonnes)

Month	Year	Year
	1965-66	1966-67
April	1,472	248
May	2,890	603
June	2,877	271
July	1,651	220

TABLE 14—*contd.*

Month	Year	Year
	1965-66	1966-67
August	2,286	747
September	2,568	2,459
October	1,189	3,537
November	722	2,007
December	214	5,077
January	114	3,910
February	102	1,450
March	272	3,015
TOTAL	16,357	23,544

However, with foreign aid which became available soon after Devaluation, the rubber manufacturing industry found a place amongst the fifty nine priority industries which were given liberal import licences in July of that year. The gap in supplies of raw rubber was then estimated at 29,500 tonnes, and *licences* were issued as follows:—

TABLE 15

Source	Quantity	Date of issue of licence	Date of import (Major portion)
	Tonnes		
1. U.S. Stock Pile (Natural)	9,000	July 1966	December 1966
2. Rumania (S.B.R.)	2,000	April 1966	Sep./Oct. 1966
3. West Germany (S.B.R.)	1,000	June 1966	Do.
4. Malaya (Natural)	2,000	June 1966	July 1966
5. Canada (Synthetic)	1,700	August 1966	July 1966
6. I.D.A. (Natural)	7,500	Sept. 1966	Oct./Nov. 1966
7. I.D.A. (Natural)	7,500	Jan./Feb. 1966	not yet landed.
TOTAL	30,700		

[NOTE.—Items (2) and (3) which are for synthetic rubber, (the former evidently against rupee payment) are included to complete the picture, though licensed prior to Devaluation].

It is the sudden arrival of this rubber in large volume between July and December, 1966 and later, which brought down internal prices from Rs. 6700/- per tonne during June/July/August 1966 to Rs. 4800/- in January 1967 and Rs. 4100/- in March, 1967 and has been the source of complaint from the producers. Considering that imports of natural rubber during the years 1964-65 and 1965-66 were 15,003 and 16,357 tonnes respectively, the import during the year 1966-67 of 27,465 tonnes, which was well over double the quantity of deficit envisaged by the D.G.T.D., was bound to have a depressing effect on the market. It is, however, a fact that the offtake by manufacturers was only 6000 tonnes during the six months ending March, 1967 against 18,000 tonnes during the corresponding period of 1965-66. Thus, it would appear to be true that manufacturers were able to keep off the market with the imported supplies and bring the market down as the following figures show :

TABLE 16
Stocks of Rubber

	Total stock with Manu- facturers	Total stock with Producers & dealers
	Tonnes	Tonnes
1-4-1965	7,528	6,566
1-4-1966	9,985	6,588
1-4-1967	11,989	11,909

13.3. It has been contended by the producers that these imports were unwise and that there were enough stocks in the country to meet requirements. Raw rubber sheets cannot be stored satisfactorily for more than three months and unless special storage facilities are available, these are liable to deteriorate. Even if it is conceded that the excess of imports over requirements for 1966-67 would be held over for the ensuing months of the current financial year, it has nevertheless resulted in hardship to indigenous producers. All the same, for an orderly marketing of indigenous production, it is necessary that imports should come in regular monthly

instalments and not as has happened during the latter half of 1966 in larger quantities just when the tapping of trees was at its height in the country. While the programming of imports in 1966/1967 probably had the effect of mounting up stocks with producers and dealers and putting the small grower in particular to financial hardship, the circumstances which obtained just before and soon after Devaluation were unusual. However, for the future we would recommend that (i) the Rubber Board should be consulted both on the volume and programming of imports; and (ii) the imports should be evenly spread out over the year.



CHAPTER 6

Development of the rubber plantation industry

14.1. During the Third Plan period about 34803 hectares (86,000 acres) were brought under rubber plantations against a target of 20,234 hectares (50,000 acres). Much

14. Plans for future expansion.

of the credit undoubtedly goes to the Rubber Board though part of this increase, which we cannot estimate, was undoubtedly on account of the provision in the prospective land ceilings scheme, which was expected to exempt land under rubber tea and coffee from the ceilings on the ownership of agricultural land. The increase in holdings of 20 hectares (50 acres) and below was 25,489 hectares (62,986 acres) and of estates 9,318 hectares (23,026 acres). The latter figure includes over 5,714 hectares (14,119 acres) of land brought under rubber by the Plantation Corporation of Kerala Ltd. The expansion under estates, excluding that relating to the Corporation, was therefore relatively smaller, though quite significant.

14.2. The *Statewise targets* for the Fourth Plan period are as follows :—

TABLE 17

Kerala	20,234 hectares (50,000 acres)
Mysore	4,047 hectares (10,000 acres)
Madras	2,023 hectares (5,000 acres)
Tripura & Assam	2,023 hectares (5,000 acres)
Andaman and Nicobar Islands	6,070 hectares (15,000 acres)
TOTAL	34,397 hectares (85,000 acres)

Of this the area in Tripura and Assam should be regarded as essentially experimental, since the rubber tree does not take kindly to certain climatic conditions and has not so far been grown commercially at these latitudes. The area so far planted in Tripura is only 8 hectares (20 acres). Similarly, an area of 16 hectares (39 acres) has been brought under rubber in Maharashtra.

15.1. An economic unit in rubber would mean an area capable of supporting a grower or the costs of an efficient managerial staff providing reasonable wages and living conditions to employees, producing good rubber at a price comparable to world prices and capable of yielding a fair return on investment. For practical purposes, the Commission assumed in its last Report (1960) that 202 hectares (500 acres) in the case of plantations and 20 hectares (50 acres) in the case of holdings would be economic holdings. Since 1960, however, cost of living and wages have continuously gone up. The recent Wage Board has fixed substantially higher wages than before, and in addition linked the wage on a sliding scale to the cost of living index at Munda-kayam upto a ceiling of 160 points (base year 1960-100). Even within the short time since the Wage Board reported, the index has shown a tendency to pierce the ceiling contemplated by it. In addition workers on rubber plantations are now entitled to a bonus, of which 4 per cent of wages is a compulsory minimum. Considering the marked tendency of wholesale price and wage indices to a rapid increase in recent years, it is clear that costs of production per unit of rubber may increase beyond our period of estimate in the future. It would follow that natural rubber and rubber manufacturers could only remain or become competitive if productivity per acre goes up. The future of rubber would therefore appear to lie in large estates, good cultivation, high inputs, and ever improving planting material and methods.

15.2. Nevertheless one cannot but notice that the small scale sector, despite its low average production has done well. During the five years from 1960-61 to 1965-66 the share of this sector went up in area from 60 per cent to 62½ per cent, and in production of rubber from 25 per cent to 40 per cent. Yields, though very low, increased from 207 kgs. per hectare (185 lbs. per acre) to 294 kgs. per hectare (262 lbs. per acre). (Both these official figures may be under estimates). *Prima facie* this industry would appear not to be suited to the small grower, leave alone the subsistence grower. The

initial capital investment is high, the annual maintenance charges heavy, and the period of waiting for a crop, which is six to seven years, very long. However, the increases in area, total production, and per-acre production, show that these holdings have been viable at the price levels of 1961-65. The holdings costed by us, varying in size from about three to thirteen hectares have had an average yield of 897 kg. per hectare, and one in which some parts may reach full maturity next year, forecasts estimates of an average of 1121 kgs. We cannot say how many of the rubber holdings belong to really small land-holders and are not part of bigger holdings with other crops. For, it is most unlikely that any small holder would put all his land under rubber. The statistics of the Rubber Board are, as discussed in para 4.10 earlier, deficient in respect of this information. However, growers who have diverted to rubber to avoid coming within the ceilings legislation could hardly be termed small growers, even though their rubber areas are small enough to be technically registered only as holdings. Apart from these, those who own more than 2 hectares (5 acres) of rubber alone would also not properly be small land-holders.

15.3. It is our impression, however, that small holdings will play a significant role in the economy of rubber. A holding of 2.00 hectares (5 acres) with the necessary financial and technical support from the State or the Rubber Board could easily maintain a family in relatively greater comfort than some other crops. For once the trees are established, the annual upkeep and the regular tapping and collection of rubber could easily be done by two or three adults in a normal working day. The Kerala Government have recently established about 2000 unemployed literate men on small holdings of about $1\frac{1}{2}$ hectares ($3\frac{1}{2}$ acres) each, and we are told these could maintain them and their families. This may well be so since one adult can easily tap 1.21 hectares (three acres) of rubber trees in a working week of seven days. The work though skilled is easily learnt, and by no means falls into the category of heavy manual labour. In its last Report (1960), the Commission observed "there should be no positive steps whether by agrarian reforms or otherwise to discourage them (small holders) from continuing in production". We now feel that with the assistance available from the Rubber Board in the matter of subsidies, planting materials, fertilisers, pesticides and fungicides, and technical advice, we could go further and say that any planter wishing to cultivate a holding of 2 hectares (5 acres) to 4 hectares (10 acres)

of rubber, should be encouraged to do so, particularly if he is willing to work with his own hands and with those of his family in the tending of the trees, and the daily collection of rubber. This personal cultivation would give him a considerable advantage over the estates who have to pay fair wages, provide housing and extend many fringe benefits to their employees.

15.4. A small holder would however be a relatively high cost producer except where he and his family are willing to provide the necessary manual labour. He has a part to play in that only he can cultivate rubber on isolated plots of small size, and if he can thereby secure gainful employment, this would be employment we should not ignore, but definitely encourage.

16.1. The natural rubber producing countries have recognised that the survival of the rubber industry depends on its ability to so lower the cost of production as to maintain its competitiveness with synthetic rubber.

16. Productivity. This fact has come home to the Indian industry judging from the large increase in the area of high yielding rubber. The world production of synthetic rubber increased from 1,102,360 metric tonnes in 1955 to 3,063,240 tonnes in 1965. Similar figures for natural rubber are 1,950,212 tonnes and 2,364,740 tonnes respectively. In percentages the world production of synthetic rubber which was a little over 33 per cent of all rubber in 1955 went up to 56 per cent in 1965. Synthetic rubber is now competitive with natural rubber in price. The pre-devaluation world price of natural rubber at origin was under Rs. 2,000/- per tonne and after Devaluation around Rs. 3,150/-. Including duty at $27\frac{1}{2}$ per cent, it is now landed at Calcutta at Rs. 4,700/- per tonne.

16.2. The trend towards synthetic rubber and the world price levels of rubber have to be noted in our country. Indigenous raw rubber cannot hope for all time to have a sheltered market. Such a market is not only a burden on the consumers, but will seriously prejudice the competitive capacity of Indian rubber manufacturers, who like the raw rubber growing industry have a great future. The answer to the problems of both is higher productivity.

16.3. The average yield in India in 1965 was 448 kgs. per hectare (400 lbs. per acre) for all production against 628 kgs. per hectare (560 lbs. per acre) in Ceylon and 918 kgs. per hectare

(817 lbs. per acre) in Malaysia. The corresponding official figures for small holdings were 294 kgs. per hectare (262 lbs. per acre) in India, as against 605 kgs. per hectare (540 lbs. per acre) in Malaysia. The average yield of holdings in India in 1960-61 was estimated at as low as 208 kgs. per hectare (185 lbs. per acre). However, the overall *average yield* for all areas in India has also gone up progressively as shown below:—

TABLE 18
Average yield of rubber

	Kgs. per hectare	Lbs. per acre
1960-61	365	326
1961-62	371	330
1962-63	383	342
1963-64	393	350
1964-65	420	375
1965-66	448	400

These figures are based on the reported production of estates and the estimated production in the case of holdings which do not, as a rule, send returns of production to the Rubber Board. Though these estimates may all be considered on the low side, they still show an encouraging trend. The weighted average for the five holdings costed by us was 808 kgs. per hectare (721 lbs. per acre) which is revealing. One of these, as pointed out earlier, has just reached 1121 kgs. per hectare (1000 lbs. per acre).

16.4. The means to higher productivity are better clones, better cultivation, and better tapping. In all these, our country, and particularly the holdings have a long way to go. The Rubber Board has done admirable work in this regard, but much remains to be done. The main hurdle is shortage of better quality clones. T.J.R.I. which has been popularised is the source of much of the average increase during the last five years. Difficulties in establishing

suitable clones, and multiplying them in adequate quantities for distribution have delayed work in this respect. T.J.R.I. is, we understand, obsolescent in Malaysia where newer varieties, many proprietary, have been evolved over the last ten years.

16.5. Strenuous effort is, therefore, needed if India is to become competitive in the production of raw rubber. The main danger is complacency on the part of the small grower, and also any feeling that emphasis on his economic weakness can save him the trouble and expense of increasing the profitability of his estate through labour, thought, and investment. This is a danger common to all industry in the country, whether manufacturing or agricultural, arising out of the sheltered markets which foreign exchange shortage has fostered. Sugarcane and sericulture are examples which we have examined in recent years where productivity and cost consciousness are not given the importance or treated with the urgency they deserve. Rubber growers should not, therefore, expect to be sheltered indefinitely. If holdings of 2 hectares (5 acres) and below are considered, their total production is well under 20 per cent of Indian production and may only be about 15 per cent. The All India price can hardly be set by this small volume, nor can its protection play a part in price policy for long. There are small holdings which already have a yield of 1121 kgs. per hectare (1000 lbs. per acre). There is no reason why others should not reach this figure well within a decade with the requisite effort on the part of growers, and of assistance from the Rubber Board and the State.

17.1. In 1957, the then Rubber Production Commissioner, Shri K. N. Kaimal submitted a report on the development of the Rubber Plantation Industry in the Andaman and Nicobar Islands. Shri Kaimal, apart from having had over thirty years' experience of the growing of rubber at the time of his enquiry in the Andamans, was an expert in the problems of the industry, both in the field and the laboratory. His report, in the drafting of which he had assistance from other experts in agriculture and meteorology, is worthy of careful attention.

17. Prospect of development of rubber plantation in Andaman-Nicobar Islands.

17.2. His main conclusion was that in respect of both soil and climatic conditions some of the Nicobar Islands are the most suitable regions in the Indian Union for rubber, and surpass the existing areas on the South-East Coast of mainland India in this

respect. He estimated the area available as "about 80,937 hectares (2 lakhs of acres) of *extremely suitable* forest land". In addition considerable areas of slightly inferior land were also available in the little Andaman, Rutland, and South Andaman Islands. The standard of yield in the latter areas "would be moderate—neither so high as that of the Nicobar region *nor so low as that in Central Travancore* where the larger proportion of the mainland plantations are situated. [The italics are ours.] He recommended that "the Nicobar area should be reserved for large economic units of at least 405 hectares (1000 acres), and preferably 809 hectares (2000 acres) or more. The other areas should be thrown open to "settlers" in family holdings of at least 5 acres on which settlers should themselves work, thereby saving on heavy capital expenditure and labour charges". He was of the view that the rubber tree in this area should attain tappable size in the sixth year, and yields should "average the order of 1345 to 1685 kgs. per hectare (1200 to 1500 lbs. per acre) per annum on reaching maturity, say the 10th year". We may remark, in passing, that the all India averages for 1965-66 were 294 kgs. per hectare (262 lbs. per acre) for holdings and 699 kgs. per hectare (624 lbs. per acre) for plantations, and maximum yields 1302 to 1473 kgs. per hectare (1162 to 1314 lbs. per acre) in Kanyakumari District (Madras) during the years 1962-63 to 1965-66. We would also observe that since Sri Kaimal's report was submitted to the Government, new planting material has been evolved, and T.J.R.I. which was being brought into popular use when Sri Kaimal reported with average yield of 1121 to 1569 kgs. per hectare (1000 to 1400 lbs. per acre) per year, has been replaced in many estates in India with clones, some proprietary, which are even higher yielders. Clone RSY 23 with a yield of 2466 kgs. per hectare (2200 lbs. per acre) and an experimental clone AVT 73 with a rated potential of 3363 kgs. per hectare (3000 lbs. per acre) are in use, in one estate in the Punalur-Pathanapuram region.

17.3. Shri Kaimal has given cogent reasons for preferring large estates to holdings in the Nicobars. These, he reveals, "are generally well organised and well managed. They have the means, the facilities and the know-how for the application of modern scientific methods in all fields of plantation practice. Consequently, they are able to produce higher yields per unit area at lower costs.....The yield per acre is the main factor in the cost of production and the size of the estate in overhead and other charges.

Elsewhere in his report he also points out that except on well drained hill slopes the small holder "may not be able to pay proper attention to soil conservation measures".

17.4. Some of Shri Kaimal's other observations are worth re-producing. "In any plan for the development of the rubber plantation industry, in order to achieve self-sufficiency within the shortest period possible, the choice should first go to that region (Nicobars)". "Nicobar rubber can compete successfully in the world raw-rubber market". "The prospects are, therefore, bright, brighter indeed than that of the mainland rubber plantation industry". His estimated yield of raw rubber on the Nicobars was 1.0 to 1.4 lakhs of tonnes on 80,937 hectares (2 lakhs of acres) of land. With newer clones it may well be more.

17.5. As a result of Shri Kaimal's report an experimental farm of 202 hectares (500 acres) of rubber has been set up in the Nicobars. It is now necessary to examine the question of extending the cultivation of rubber in the Andamans and Nicobars in the light of the experimental cultivation which we understand has been successful. The shortage of rubber in the early years of the next Plan is likely to be of the order of 45,000 tonnes per year, even after allowing for all anticipated new plantation, and re-plantation with high yielding varieties in India. This would mean an additional area of about 40,469 hectares (a lakh acres). Large scale plantation in the Nicobars would keep Indian rubber and rubber manufactures competitive in the world markets and obviate the large drain on foreign currency which imports of raw rubber now involve. The scheme need not interfere with any other scheme for settling small holders in this group of Islands, for considerable waste and forest land is available in the inhabited islands. The Nicobars, however, are sparsely inhabited which is one reason why an estate or estates in the large scale sector alone promise success. Since the rubber tree takes at least six years to produce any rubber, and ten years to reach maturity, there is no time to be lost in the examination of a project for growing rubber on a large scale in the Nicobars. We offer no views as to whether plantations in the Nicobars should be in the public or private sector.

CHAPTER 7

Determination of prices

18.1. A strong plea has been made to us that we should depart from our usual method of assessing capital investment for the purpose of settling the profit margin and base prices on the current market value of land. It has been urged that if this is not done there will be a shift from rubber cultivation to other crops. For the same reason, it is also argued that the rubber price should be increased in par with recent increases in prices of other crops which can be grown on land suitable for rubber. A few title deeds and a report from the Collector of Kottayam have been produced before us to show that there has been a sharp spurt in land prices recently—a phenomenon observed all over the country—and that land within easy access of towns sells at over Rs. 2023/- per hectare (Rs. 5000/- per acre). No information has been produced of the current prices of forest lands and waste which, however, are really appropriate for plantation crops. We would say straightaway that much as the country needs rubber, it would not be desirable to encourage the growing of rubber on such high cost land which should be put to better use, as for example, to cultivate food crops. Land in the vicinity of towns and with adequate supplies of water should really be put to other or more profitable uses. That some land owners have grown rubber on such land either to diversify cultivation or because the prices of rubber during 1961/65 were attractive, is not a consideration that should weight with us. Rubber is needed but not at any cost.

18.2. As regards the comparative prices of alternative crops, the argument is, on the surface, stronger. Here again the crops likely to compete with rubber like coconut, areca, tapioca etc. are of value to the economy of the country, and the diversion to these crops cannot on the balance be said to be harmful. The statistics of land under rubber and other crops including competitive crops do not, however, show any trends of significance. *Statistics of land* are as follows :—

TABLE 19
Area in '000 hectares

	1961-62	1962-63	1963-64	1964-65	1965-66
Rubber	140.88	146.15	152.95	155.32	164.71
Tapioca	236.67	221.61	209.91	209.37	229.68
Coconut	505.03	539.29	549.89	558.99	586.31
Arecanut	56.74	55.30	56.69	59.49	64.48
Coffee	133.08	137.91	142.91	146.95	149.63
Tea	33.37	38.56	38.40	39.65	39.86
Cashewnut	55.05	82.97	82.37	85.98	87.37
Cardamom	133.08	137.91	142.91	146.95	149.63

The following Table gives the prices:—

	1960	1961	1962	1963	1964	1965	1966
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Tapioca (Raw per quintal).	7.38	8.20	9.39	8.62	10.01	19.73	17.14
Coconut (100 nos.)	22.17	22.29	24.66	25.30	24.86	34.77	41.32
Arecanut (100 nos.)	3.13	2.97	3.90	2.49	3.14	3.72	3.68
Tea (Kg.)	5.69	5.03	5.03	6.15	5.99	6.94	4.80
Cashewnut (Quintal)	80.73	76.48	59.00	66.97	84.17	95.29	104.53
Rubber (RMA II) (Quintal)	326.30*	326.30*	326.30*	326.30*	311.30	344.91	548.37

Source : Economic Survey of Kerala (1964 & 1966).

*Controlled prices of RMA II rubber.

It will be noticed that with the exception of tapioca and coconut, the prices of which have risen to high levels due to shortages of food and cooking oil during the last two years, prices upto 1965 show no definite trend. The prices of areca and cashew, the crops which with tapioca would really compete with rubber went up

significantly in 1965 and 1966. Nevertheless, we do not consider that price fixation of any commodity can properly be linked with parities, since every commodity has its own peculiar supply and demand characteristics and market conditions will not always be the same. The cost of production in our view is the only proper basis for fixing prices, particularly of a protected commodity. That rubber cultivation went up significantly between 1961 and 1966 at the prices then current, shows that they were remunerative. This apart, there is no doubt that whilst the subsistence holder shows a preference for food crops, others above this level generally diversify their cultivation and do not sharply change the pattern of their cultivation from one crop to another over all their land merely because of an anticipation of price.

18.3. We prefer, therefore, to adhere to our usual method of arriving at fair costs of production and fair profits. We deal with these issues in detail in paragraph 19 of this Report, but wish to make some general observations here. When the Commission enquired into the costs of production of rubber in 1952, the costs of small holdings and estates were averaged in the ratio of their respective percentages of production which were 28 and 72, after giving the holdings an arbitrary incentive in costs of 15 per cent over the costs of production of the estates. The principle of weightage was given up by the Commission during its enquiry of 1960 for various reasons dealt with in our Report on that enquiry. Broadly, the Commission was of the view that costs should not depend on overall averages vitiated by the high expenses and low production of marginal and sub-marginal units. It also took note of the advantages the small grower has in the matter of statutory incidences of labour amenities and taxation which large estates cannot escape. Since then, however, significant changes have occurred in the pattern of production. While estates still produce the larger proportion of the country's rubber, it has fallen from 72 per cent in 1960-61 to 60 per cent in 1965-66. The area covered by holdings has increased from 76,375 hectares (188,728 acres) to 101,865 hectares (251,714 acres) or 33 per cent, whilst the similar increase in the case of estates is only from 38,760 hectares (95,779 acres) to 43,157 hectares (106,644 acres) or only 12 per cent. We do not know how much further expansion is possible in the estates, but a survey made by the UPASI shows that in estates which are members of the Association, the planted area of 16,910 hectares compares with 1,650 hectares of uncultivated land available for

rubber, revealing the possibility of a further expansion of about 10 per cent. In Kerala, further expansion will largely be in holdings, since cultivable waste to the large extent needed by estates is not available and the only prospects of large expansion lie in private forests which are probably covered with timber. It is significant that in the small sector the registered area planted under high yielding varieties went up from 22,743 hectares (56,199 acres) in 1960-61 to 43,929 hectares (108,551 acres) in 1965-66 as against similar figures of 23,811 hectares (58,838 acres) and 39,893 hectares (98,577 acres) in the case of estates. This shows that the owners of holdings are alive to the importance of planting high yielding varieties, and are taking advantage of the technical and other assistance of the Rubber Board. We consider, therefore, that large holdings where immediate prospects of increase lie should be encouraged.

18.4. Of the holdings, those below 2 hectares (5 acres) number 49,636 and cover 38,339 hectares (94,739 acres). These are probably more or less marginal units to which the remarks made by us in our Report of 1960 in the matter of labour costs and taxation would apply. Similar figures for those between 2 and 4 hectares (5 and 10 acres) are 4660 and 13,982 hectares (34,551 acres), and those between 4 and 20 hectares (10 and 50 acres) 2878 and 24,054 hectares (59,438 acres). The latter two groups of which we have examined the costs of five holdings, are likely to increase in importance as regards production in the near future. For, anyone owing 4 to 20 hectares (10 to 50 acres) of rubber trees is not really a small farmer and should be in a position to take to improved methods of cultivation, particularly when technical assistance and subsidy are available to him. We propose, therefore, to treat the costs of this size of holding as of importance to the future expansion of production. We deal with this issue more fully later in this Report, as also with the connected issue of how to avoid any unduly high profits to the large estates which may accrue as a consequence.

19.1. Even though the selection of estates was made in consultation with the Rubber Board and Rubber Production Commissioner, representation was made by some

19. Cost of production. participants at the public inquiry that the large estates selected were not representative ones but were model estates. Amongst the selected eleven estates, nine were selected during the last inquiry also. We have considered all the relevant

aspects before selection and are of the view that the selected estates are representative. In regard to small holdings, the main objection was that the selection was from the best rubber growing area in the State. Although to some extent this is true, we could not do anything better. We must also observe that natural environment is evened out to some extent by good cultivation. Even after completion of the cost examination of the selected holdings, both during our meetings at Mundakayam and at the public enquiry we offered to examine the books of some more small growers of any region but there was no response from any quarter. Instead, it was urged by the representatives of the small growers present at the public inquiry that even if they did not maintain any accounts, some estimation could be done for the small growers. We have no doubt that other small growers besides those costed have accounts which they could have shown us if they were interested. For, we are dealing with inhabitants of a State where literacy is high and a sense of business keen. A realistic estimate can only be made when actual expenses are known even if not kept in any accepted system of accounts, but any estimate made on oral statements and hypothetical figures cannot lead to any reliable result and no policy decision can be framed upon it. With the cost figures of the costed small units and with other relevant particulars, we have assessed the position of the small holders and we have weighed such assessment in its proper perspective in recommending a price for the industry. The names of the costed estates, their area under tapping, their immature area, their total and average yield during the latest costed period are shown in table 20 on pages 50 and 51. Similar details in regard to the costed small holdings are also given.

19.2. The reports of our Cost Accounts Officers being confidential have been sent to the Government under separate enclosure along with the report.

19.3. *Method of costing.*—The total expenditure for each of the costed estates was collected under the following heads for two financial years 1964-65 and 1965-66.

1. Upkeep, maintenance and cultivation of mature areas.
2. Tapping and collection charges of latex and scrap.
3. Processing of latex into rubber products.

TABLE 20

Names of costed estates and holdings, their area under tapping, their immature area, their total and average yield.

Name of the Company	Name of the Estate	Location	Rubber growing region	1965-66		Yield per hectare
				Mature	Immature Production	
				Hectare	Hectare	Tonnes
A. Estates :						
1. The Cochin Estates Ltd.	Malabar	Balusseri	Malabar	642.76	353.08	487.096
2. Do.	.	Coorg	Mysore	71.33	175.54	51.522
3. The Thirumbadi Rubber Co. Ltd.	Rubber	Thirumbadi	Malabar	172.96	374.59	138.679
4. The Vaniampara Rubber Co. Ltd.	Rubber	Trichur	Trichur	127.48	229.82	67.455
5. The Tropical Plantation Ltd.	Plantation	Chittadi	Thodupuzha	113.28	89.17	70.082
6. The Travancore Rubber & Tea Co. Ltd.	Rubber	Manikal	Mundakayam	384.52	313.12	338.260
7. Do.	.	Kuppakayam	Thodupuzha	200.15	457.87	162.961
8. Malayalam Plantations Ltd.	Plantations	Mundakayam	Do.	908.14	228.29	678.100
						746.69

9. The Rajagiri Rubber & Produce Co. Ltd. . . . Shaliacary	Punalur	Punalur	Hectare 501.34	Hectare 117.40	Tonnes 494.391	Kgs. 986.14
10. Catholic Archdiocese, Trivandrum Bethany	Mukampala	Kanyakumari	156.75	63.46	120.896	771.27
11. The Vaikundam Rubber Co. Ltd.						
Simple Average						
Weighted Average Vaikundam	Kaliel	Do.	298.98	162.46	279.843	935.99 778.48 807.59

B. Small holdings :

Names of the proprietors

1. Shri K. Thampy Irinchayam	Irinchayam	Punalur	2.465	2.307	1.594	646.65
2. Dr. G. Thampy	Do.	Do.	2.465	2.635	1.655	671.40
3. Brother Blaise	Nedummangad	Do.	3.642	9.931	4.090	1122.87
4. Mrs. A. Pothen	Vampayam	Do.	6.070	1.740	5.073	835.58
5. Mr. O. M. Alexander	Kottayam	Thodupuzha	2.833	..	1.694	598.04
Simple Average						774.91
Weighted Average						807.21

4. General charges including.
 - (a) Estate Office and
 - (b) Head office expenses.
5. Packing charges.
6. Cost of transport and handling upto F.O.B., Cochin.
7. First year's expenses on
 - (a) Replanting.
 - (b) New Planting.
8. Maintenance of immature area from second year to the year of maturity.

In the case of small holdings, although adequate analysis was not available, attempts were made to compile the expenses under the aforesaid heads for the sake of uniformity in presenting the costs of estates and holdings on a comparative basis. The main difficulty faced in the latter cases was the allocation of expenses *between the mature and immature area*. The expenses which were indistinguishable with the mature area were taken under expense heads of that area but the expenses which were common to both the areas were apportioned between them on rational bases in consultation and discussion with the representatives of the holdings whom we found both knowledgeable and co-operative.

19.4. *Basis of allocation of General expenses.*—The expenses compiled under this head are the expenses incurred in the estate office and in the head office. The salaries and allowances of the Supervisory staff, travelling expenses, medical benefits of the estate office staff, running and maintenance expenses of the estate vehicles, maintenance of the bungalows of the supervisory staff and other office expenses (e.g. postage, stationery) are included under the expense head of the estate office. In accordance with the method followed on the last occasion, the estate office expenses have been allocated to the mature and immature area on the basis of wages. The head office expenses, however, were charged only to the mature areas. Where the estates have under cultivation both rubber and other crops, the general expenses were first allocated to the rubber crops and other crops on a suitable basis. Items of expenses such as bonus, donation, Managing Agent's commission, interest etc

have been excluded from costs, since these come either under the head of profit, or of the head of return on employed capital.

19.5. *Depreciation.*—The depreciation of the assets was calculated at the appropriate rates allowed in taxation.

19.6. *Basis for the determination of the costs of various grades of product under different groups.*—During the Commission's last inquiry, attempts were made by Cost Accounts Officers to develop the costs of individual grades of products on the basis of rationally assessed basic values of latex and scrap and other direct and allocated conversion charges. The industry, however, did not agree with this method and maintained that there should not be any difference between the value of latex and scrap collected and further represented that long standing differentials should be maintained in the ultimate price structure. The Commission while appreciating the Cost Accounts Officers' method as theoretically correct, finally decided to accept the method as suggested by the industry. The method of costing was discussed in the public inquiry on this occasion also and the industry reiterated the previous view in this regard. The desirability of the maintenance of the cost differentials that existed in the last price control order for natural rubber was also discussed at great length at the public inquiries and all sections of the industry wanted the continuity of the long standing pattern of differentials. Even an enlargement in the proportion suggested by the devaluation of the rupee was not agreed to. After careful consideration of the question we have decided to adopt the old set of differentials in framing a price structure and not to make any enhancement in the differential for a particular grade viz., P.L.C. grade as represented by a certain producer at the end of the discussions. In the matter of costing, our Cost Accounts Officers, therefore, followed the same method as was adopted on the last occasion. Under this method, the selling price of R.M.A. 1 sheet has been worked in such a way that the prices of other grades of products will automatically follow, with adjustment of the differentials, and the final price structure will reflect the exact differential that prevailed during the last price control period. Sole crepe is not regarded as a form of natural rubber and so has been excluded from the scope of cost examination.

19.7. *Cost of upkeep, maintenance and cultivation of mature Area.*—The main items of work grouped under this head are weeding, application of manure, spraying and dusting with fungicides and other pest control measures. All the items of expenses viz.,

labour, cost of manure and spraying materials, share of general overheads pertaining to these jobs have been included under this head. The average expense per hectare and the incidence of the expense per 100 kgs. are shown below in respect of the costed estates and holdings. The total expenses have been divided by the total weight of procured crop to arrive at an incidence per 100 kgs. In accordance with the desire of the costed units, the costs have been shown against assumed names of the units to avoid disclosure of the cost of the individual unit.

TABLE 21

Costs

1	1964-65/1964		1965-66/1965	
	Per hectare	Per 100 Kgs.	Per hectare	Per 100 Kgs
	Rs.	Rs.	Rs.	Rs.
I Estates				
1. A	302.52	39.51	406.74	53.67
2. B	341.57	44.91	638.93	88.46
3. C	671.40	56.87	634.38	79.12
4. D	48.73	11.29	169.21	31.98
5. E	246.94	45.63	274.85	44.43
6. F	493.94	51.32	456.60	51.91
7. G	361.58	60.80	456.03	56.01
8. H	494.40	71.86	562.65	75.35
9. I	364.65	35.73	412.23	41.80
10. J	319.99	41.82	165.69	21.48
11. K	204.01	22.19	218.87	23.38
Simple Average . .	349.98	43.81	399.65	51.60
Weighted Average . .	373.27	46.77	431.93	53.48

TABLE 21—*Contd.*

1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
II. Small Holdings :				
1. L	262.88	42.58	264.91	40.96
2. M	202.03	31.97	213.79	31.84
3. N	388.53	44.87	612.85	54.58
4. O	571.66	69.07	928.50	111.11
5. P . . . .	..	..	536.89	89.77
Simple Average . .	356.28	47.12	511.39	65.65
Weighted Average . .	411.89	53.58	604.81	74.93

19.8. The break-up of the average cost of maintenance, upkeep and cultivation per hectare and per 100 Kgs. in respect of eleven costed estates and five small holdings are shown below for the year 1965-66.

TABLE 22

Break-up of the Average Cost				
1	Simple Average		Weighted Average	
	Per hectare	Per 100 Kgs.	Per hectare	Per 100 Kgs.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
A. Estates :				
1. Wages :				
(a) Weeding & Pruning .	17.68	2.33	17.94	2.22
(b) Forking & Manuring .	6.39	0.85	5.70	0.70

TABLE 22—*contd.*

1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
(c) Spraying, dusting etc. .	40.05	5.36	42.00	5.20
(d) Cover crop, shade trees etc.	1.21	0.13	1.91	0.24
(e) Fences & boundaries .	13.79	1.86	11.05	1.37
(f) Maintenance of tools .	1.89	0.33	0.77	0.10
(g) Miscellaneous . . .	20.49	2.57	28.13	3.48
TOTAL WAGES .	101.50	13.43	107.50	13.31
2. Stores :				
(a) Manuring	86.90	11.18	80.13	9.92
(b) Spraying, dusting & other pest control measures .	96.88	12.21	113.28	14.03
(c) Miscellaneous . . .	2.10	0.25	2.42	0.30
TOTAL STORES .	185.88	23.64	195.83	24.25
3. General expenditure .	112.27	14.53	128.60	15.92
4. Total Expenses . . .	399.65	51.60	431.93	53.48

TABLE 22—*contd.*

1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
B. Small holdings :				
1. Wages :				
(a) Weeding & Pruning .	58.09	6.42	60.14	7.45
(b) Weeding & Manuring .	63.54	8.14	86.35	10.70
(c) Spraying, dusting etc.	37.60	5.17	30.67	3.80
(d) Fences & boundaries .	7.96	0.71	8.30	1.03
TOTAL WAGES .	167.19	20.44	185.46	22.98
2. Stores				
(a) Manure	209.07	27.89	243.49	30.16
(b) Spraying, dusting etc. .	66.23	9.07	92.08	11.41
(c) Miscellaneous . .	16.94	2.00	27.13	3.36
TOTAL STORES .	292.24	38.96	362.70	44.93
3. General expenditure .	51.96	6.25	56.65	7.02
4. Total expenses . .	511.39	65.65	604.31	74.93

19.9. *Cost of Collection.*—Under this head are included the tappers' wages and all other expenses incurred in the collection of latex and scrap and transporting the same to the processing house. In certain estates the tappers are required to carry the latex and scrap upto the processing house, whereas in certain estates there are arrangements for transporting the latex and scrap from the collection area to the estates' processing units. The total expenses for collection have been divided by the aggregate weight of the latex and scrap in the determination of the incidence per 100 kgs. The expenses have been collected under wages, stores, transport and

general expenditure. The expenses incurred for collection of 100 kgs. of rubber for the costed estates and holdings are detailed below :

TABLE 23

		Collection Expenses	
		1964-65	1965-66
		Per 100 Kgs.	Per 100 Kgs.
		Rs.	Rs.
I. Estates :			
1. A		107.72	112.05
2. B		115.86	132.51
3. C		192.54	208.85
4. D		153.38	151.70
5. E		129.98	136.01
6. F		67.79	69.09
7. G		126.92	88.79
8. H		140.61	134.49
9. I		92.40	102.69
10. J		62.16	58.89
11. K		73.22	78.49
Simple Average		114.78	115.78
Weighted Average		109.45	110.42
II. Small holdings :			
1. L		81.34	84.13
2. M		82.09	75.10
3. N		77.66	62.87
4. O		63.03	80.54
5. P		..	98.93
Simple Average		76.03	80.30
Weighted Average		72.24	77.39

19.10. The average cost of collection per 100 kgs. can be further analysed under the following elements for 1965-66.

TABLE 24

	Simple Average	Weighted Average
	Per 100 Kgs.	Per 100 Kgs.
A. Estates :		
	Rs.	Rs.
1. Wages	52.43	46.06
2. Stores	9.23	9.66
3. Transport	2.06	2.47
4. General Expenditure	52.06	52.23
TOTAL	115.78	110.42
B. Small holdings :		
	Rs.	Rs.
1. Wages	54.16	55.46
2. Stores	1.89	1.08
3. General Expenditure	24.25	20.85
TOTAL	80.30	77.39

It will be noticed that while wages are of the same order, expenses on stores and general expenditure were noticeably less with the holdings.

19.11. The total average cost per 100 kgs. upto collection stage, is given below.

TABLE 25

	1964-65		1965-66	
	Simple Average	Weighted Average	Simple Average	Weighted Average
Rupees per 100 Kgs.				
A. Estates :	Rs.	Rs.	Rs.	Rs.
1. Cost of maintenance & cultivation . . .	43.81	46.77	51.60	53.48
2. Cost of collection . . .	114.78	109.45	115.78	110.42
TOTAL COST UPTO COLLECTION	158.59	156.22	167.38	163.90
B. Small holdings :				
1. Cost of maintenance & cultivation . . .	47.12	53.58	65.65	74.93
2. Cost of collection . . .	76.03	72.24	80.30	77.39
TOTAL COST UPTO COLLECTION	123.15	125.82	145.95	152.32

While comparing the average cost in case of small holdings for the two years, one point has to be borne in mind viz. that the cost for 1964-65 is the average for four holdings, whereas the average for 1965-66 is the average for five holdings.

19.12. *Processing Cost.*—The processing charges include factory labour, cost of acid and chemicals, cost of firewood and other fuel, repair and maintenance charges of processing house and smoke house, factory staff salary and share of general expenses. Certain estates selected for costing sell their entire latex and produce a very small quantity of sheets just to test the D.R.C. content of the latex. The processing costs for such units being not representative were excluded from our consideration and the processing costs of only those units which had regular manufacturing activities have

been taken into account. The average processing and packing costs for the costed units are given below :—

TABLE 26

		per 100 kgs.			
		1964-65		1965-66	
		Processing cost	Packing cost	Processing cost	Packing cost
		Rs.	Rs.	Rs.	Rs.
I. Estates :					
1. A	. . . . .	..	..	21.23	1.32
2. B	. . . . .	30.16	1.53	46.83	2.05
3. C	. . . . .	33.02	2.31	37.79	2.64
4. D	. . . . .	19.93	1.52	19.04	1.05
5. E	. . . . .	..	..	..	..
6. F	. . . . .	31.89	3.36	33.68	2.45
7. G	. . . . .	29.60	2.26	32.88	1.96
8. H	. . . . .	45.34	2.06	..	..
9. I	. . . . .	34.67	2.60	38.18	2.60
10. J	. . . . .	..	..	..	..
11. K	. . . . .	19.51	1.15	21.42	1.87
Simple average	. . . . .	30.52	2.10	31.38	1.99
Weighted average	. . . . .	33.10	2.31	32.92	2.04
		1964-65		1965-66	
II. Small holdings :					
1. L	. . . . .	. . . . .	. . . . .	111.72	99.69
2. M	. . . . .	. . . . .	. . . . .	78.94	88.76
3. N	. . . . .	. . . . .	. . . . .	60.12	35.55
4. O	. . . . .	. . . . .	. . . . .	35.37	40.84
5. P	. . . . .	. . . . .	. . . . .	..	33.90
Simple average	. . . . .	. . . . .	. . . . .	71.54	59.75
Weighted average	. . . . .	. . . . .	. . . . .	57.95	56.84

19.13. The *break-up of average processing cost* is shown below for 1965-66.

TABLE 27

		Per 100 Kgs.	
		Simple average	Weighted average
		Rs.	Rs.
A. Estates :			
1. Salaries		3.32	3.18
2. Wages		6.88	7.20
3. Power & Fuel		4.75	4.60
4. Stores		2.92	3.05
5. Repairs & Maintenance		2.40	3.00
6. Depreciation		2.46	2.11
7. Sundries		0.75	0.84
8. General expenses		7.90	8.94
TOTAL		31.38	32.92
B. Small holdings :			
1. Salaries & Wages		16.26	15.98
2. Power & Fuel		26.38	18.36
3. Stores		6.23	5.72
4. Repairs		1.80	1.23
5. Depreciation		5.04	7.33
6. Sundries		1.61	1.01
7. General charges		8.48	6.93
TOTAL		65.80	56.56

The break up of the processing costs for small holdings has been based on the figures of four holdings. One of the holdings viz. N had no processing unit of its own, but got the sheets processed on the payment of a lump amount in a neighbour's processing house. The analysis item-wise of this lump payment being not available, the charges paid by this unit could not be considered in the break-up of cost. The processing expenses under salaries and wages, power and fuel, stores and depreciation in case of small holdings are significantly higher as compared with those of the large estates. The low volume of production is the main reason for this. In the case of the holdings L and M, the consumption of firewood was abnormally high and this resulted in a very high incidence under this head. Although we have not carried out any adjustment in the actual cost, we have adopted a reasonable norm in our estimates for this item.

19.14. *Grade differentials to equate average cost to that of R.M.A.I.*—The processing charges of all the products excluding the expenses pertaining to the products not selected for costing were compiled. To this were added the proportionate costs of latex, packing charges and transport charges f.o.b. Cochin. The aggregate amount was then distributed amongst the costed products in such a way that the cost differentials as discussed in paragraph 19.6 are maintained. The excess cost of R.M.A. I sheet thus calculated over the average costs represents the grade differential. The production gradewise of processed sheets for estate A being not available and the production also being very low, has not been considered for determining the average grade differential. In case of small holdings the production gradewise was available only in two cases in 1964-65 and in three cases in 1965-66. As far as we know, the small holdings do not process rubber under various groups other than the R.M.A. sheets. It may be assumed that the quality of processed products does not vary much in so far as the small growers are concerned. Consequently, the grade differential arrived at on the basis of the figures of these small holdings are representative for the small growers. The *grade differentials* to equate the average cost to that of R.M.A. I in respect of costed units are shown below:

19.15. *Transport and Handling charges from Estates to F.O.B. Cochin.*—Besides sending goods to Cochin, sales are also made to different destinations to various parties and in addition,

TABLE 28

Per 100 kgs.

	1964-65	1965-66
	Rs.	Rs.
I. Estates :		
1. A . . . . .	..	..
2. B	2.97	2.47
3. C	14.29	15.87
4. D	6.62	6.62
5. E . . . . .	..	..
6. F	11.40	7.75
7. G	11.63	10.66
8. H	11.92	..
9. I	7.01	7.54
10. J . . . . .	..	..
11. K	1.94	2.13
Simple average	8.47	7.58
Weighted average	8.52	6.97
II. Small holdings :		
1. L	5.80	2.60
2. M	6.88	2.10
3. N . . . . .	..	..
4. O . . . . .	..	.
5. P . . . . .	..	6.63
Simple average	6.34	3.78
Weighted average	6.32	3.91

sales are also effected locally at the estates. The small holdings, by and large, deliver their products to the local dealers or to the co-operative societies. Based upon actual figures and on estimates

wherever necessary, an average charge for transportation and handling has been arrived at, and this has been adopted both for estates as well as holdings. The simple average and the weighted average transport and handling charges were estimated at Rs. 4.02 and Rs. 3.10 per 100 kgs.

19.16. *Total cost of production.*—The total cost f.o.b. Cochin of R.M.A. I sheets for 1965-66 worked out as follows :—

TABLE 29

Per 100 Kgs.

	Simple Average	Weighted Average
	1965-66	1965-66
	Rs.	Rs.
A. Estates :		
1. Latex (<i>vide</i> paragraph 18.10)	167.38	163.90
2. Processing charges & packing (<i>vide</i> paragraph 18.12)	33.37	34.96
3. Grade differential to equate the cost of production to R.M.A. 1 (<i>vide</i> paragraph 18.14)	7.58	6.97
4. Estimated freight and handling to f.o.b. Cochin (<i>vide</i> paragraph 18.15)	4.02	3.10
5. Total cost of production	212.35	208.93
The yield per hectare corresponding to the cost	778 kgs.	808 kgs.
B. Small holdings:		
1. Latex (<i>vide</i> paragraph 18.10)	145.95	152.32
2. Processing charges and packing (<i>vide</i> paragraph 18.12)	59.75	56.84
3. Grade differential to equate the cost of production to R.M.A. 1 (<i>vide</i> paragraph 18.14)	3.78	3.91
4. Estimated freight & handling f.o.b. Cochin (paragraph 18.15)	4.02	3.10
Total cost of production	213.50	216.17
The yield per hectare corresponding to the cost	775 kgs.	807 kgs.

20.1. We discussed the cost of production worked out by our Cost Accounts Officers with the representatives of the costed units.

20. Estimates of cost. We have framed our estimates of costs for the next three years in the light of the discussions. In estimating the average yield per hectare per annum in respect of the costed estates and holdings, we took into consideration the decrease in production due to their known replantation programmes and the progressive increase in yield in the newly matured areas and the additional crop that would come from the areas that are expected to mature during the period of estimate. The simple average and the weighted average yield per hectare in respect of the estates worked out to 891 kgs. and 883 kgs. respectively. The corresponding averages in respect of the costed holdings came to be 766 kgs. and 794 kgs. respectively. Expenses incurred for maintenance, manuring and tapping etc. have a relation to yield, although not direct. Assuming that there is no wasteful expenditure, better upkeep and maintenance, more intensive manuring, and efficient tapping will entail more expenses but will increase the yield. A fall in the standard of the performance of these functions, although it may result in a lesser quantum of expenses, will tend to decrease the yield. In other words, the quantum of expenses incurred by a particular estate can be regarded as 'true' only in relation to its yield under the given circumstances of the estate. The average expenses of the costed units should, therefore, be related to their average production only and the adoption of any other volume of production in relation to their expenses will be incongruous. As we have considered the expenses of these costed units we have in recommending a price adopted their estimated yields also in working out their cost per unit of production. The Government resolution of the new wage structure was modified by the subsequent resolution by the Plantation Labour Committee and this modified wage structure has by and large been adopted by the industry. In estimating the labour cost, we have taken into consideration this modified wage structure. The element of D.A. that has come into effect since 1st April 1967 has also been given effect to in estimating the cost. The salaries for Supervisors and Maistries have been estimated in the light of their new scales of pay. The normal increments for staff wages have been estimated in accordance with the existing Memorandum of staff settlement. The representation made by the industry for increase in the fertilizer prices in consequence of the withdrawal of subsidy by Government on fertiliser has also been considered and allowed for. The

latest price trends in respect of fungicides, acids and chemicals have been considered and given effect to and provision has been made for probable increase in prices of miscellaneous stores. Reasonable annual increments have been provided for staff other than those mentioned above. The amount of depreciation in respect of capital assets will progressively diminish in future on account of the computation of depreciation on the written down values but in our estimate we have kept the same amount of depreciation as for the actual costed period in the expectation that there will be some routine additions in future. An allowance for contingency has been made at Rs. 15/- per 100 kgs. to meet unforeseen expenses in the future. It is considered that this element will enable the industry to meet increase in D.A., if any, on 1-4-1968 in accordance with the new wage structure. We have decided to adopt the simple average of estimated costs of the costed units as representative of the industry.

21.1. In addition to the collection of latex and processing it into various rubber products, the other equally important function of a rubber estate is the replacement of the aged trees. In the Commission's last

21. Replantation Cost.

inquiry, the life of a rubber tree was assumed to be thirty years but in the present inquiry, the industry urged on us for the adoption of twenty-five years. It is stated that after twenty-five years the maintenance of the trees becomes uneconomic and when it is the aim to increase the production of rubber, it is desirable that the trees be felled after twenty-five years of tapping. Accordingly, the life of the trees has been estimated at twenty-five years. This is the current practice in Malaysia also. After considering the data from the costed units we have taken the replantation cost at Rs. 6200/- per hectare, out of which the expenses for the first year have been worked out at Rs. 1560/- and the balance represents the maintenance expenses for seven years, which on an average works out to Rs. 663/- per year. The net burden on a planter for the replantation will be the total expenses incurred by him less the sale realisation of the felled trees. In the Commission's previous inquiry, the sale realisation per tree was adopted at one rupee and the population of the trees per acre was adopted at 80. Compared with the figures adopted last time it was observed that the sale realisation per tree was much higher and the density of the trees was also greater. The average known realisation per tree in the costed estates varied from Rs. 10.20 to Rs. 19.07. Of course, the sale realisation

varies considerably from plantation to estate plantation depending upon the condition of tree and the situation of the estate. Considering all these aspects, we have decided to adopt the sale realisation at Rs. 5/- per tree and the density at 200 trees per hectare. The adoption of these figures will give a small extra margin to the industry. Thus, the *net expense* for replantation to be incurred by a planter per hectare will be as follows :

TABLE 30

	Rs./Hectare
1. Cost of replantation and subsequent maintenance	6,200
2. Less credit for sale realisation of trees	1,000
3. Net expenditure	5,200

The expenses incurred by a planter for replantation should be considered as his capital investment and he has to earn this replantation cost through the sale of rubber. Since the life of a tree has been assumed to be twentyfive years, he has to earn back his capital investment at 4% per annum or Rs. 208/- per year. This amount, related to an average yield per hectare at 891 kgs., makes it necessary for him to realise Rs. 23.34 through the sale of 100 kgs. of rubber. Since a part of this is in the nature of development expense, we recommend that one half of this amount viz. Rs. 11.67 be included in the retention price of the grower. We have recommended a new scale of subsidy in para 21.9 to be paid to the growers to enable them to meet the balance amount of the replantation cost which will not be recovered through the retention price.

21.2. *Return on Capital Employed.*—The following table shows the *values of land and development per 100 kgs. of rubber* for the costed estates. The assets have been split up under two stages 'upto collection' and 'for processing'. The assets in respect of processing of those estates which do not regularly process their latex have not been taken into account in the compilation of average assets required for processing. The net fixed assets have been calculated after taking into consideration expenses to be incurred by the States for their known replantation and maintenance of the mature area during the period of estimate and the amount to be subsidised by the Rubber Board in the scale recommended by us.

TABLE 31

Rs. per 100 Kgs.

Estates	Upto collection		Total	Processing
	Land and development	Other fixed assets		
	Rs.	Rs.	Rs.	Rs.
1. A	739.56	240.76	980.32	80.08
2. B	549.74	35.32	585.06	19.99
3. C	643.51	67.06	710.57	6.82
4. D	366.41	9.30	375.71	..
5. E	585.16	63.32	648.48	6.02
6. F	827.03	108.17	935.20	10.29
7. G	256.09	126.54	382.63	..
8. H	464.95	44.23	509.18	..
9. I	1,210.67	76.75	1,287.42	..
10. J	529.76	68.13	597.89	20.43
11. K	617.29	83.96	701.25	27.27
Simple average . . . . .	..	..	701.25	..

In the case of Estate G, the proportion of the mature area in relation to the total rubber area being very low, the incidence of Block has been very high. In working out the average, this estate has been excluded. The incidence in case of the estate J also is high, because it was recently purchased. However, since this high incidence is not due to any abnormal feature, it has been taken into account for averaging purposes. The simple average of the net fixed assets per 100 kgs. of processed rubber worked out to Rs. 728.52. The working capital component in the capital employed has been assessed at three months' cost of production less depreciation. The total capital employed per 100 kgs. of processed raw rubber thus worked to Rs. 781.93. In case of estates we have

allowed a return at 16% on the capital employed considering that taxation ranges from 25 to 52% and on this basis, the return per 100 kgs. worked out to Rs. 125.11. We estimate that a dividend of over 10% should be possible with fair management. All the costed small holdings excepting one are inherited property. The valuation of the land and development and other fixed assets in these cases could not be properly assessed. To provide for a reasonable incentive to the small grower, we have considered that a fair return due to him should be one thousand rupees per hectare. This is over & above the value of his labour and supervision. In addition to the yielding area, an area equivalent to approximately twenty per cent of the mature area has also to be maintained and the return should cover this area of land also. The total return to be earned on one hectare of mature area on this basis works out to Rs. 1200/- per annum. This amount when related to an yield of 766 kgs. per hectare results in a return of Rs. 156.66 per 100 kgs. Compared with the estates, a higher rate of return has been allowed to the small growers in view of his lower volume of turnover.

21.3. The fair selling price estimated by us is shown below.

TABLE 32

	Cost based on Estates	Cost based on Holdings
	Per 100 Kgs.	Per 100 Kgs.
1	2	3
	Rs.	Rs.
1. Cost of production including packing . . .	216.66	223.67
2. Provision for contingencies	15.00	15.00
3. Freight and handling f.o.b. Cochin	4.02	4.02
	235.58	242.69
4. Depreciation on plantation cost	11.67	11.67

TABLE 32—*contd.*

1	2	3
	Rs.	Rs.
5. Grade differential to equate cost of production to R.M.A.I. grade	7.53	3.78
6. Cost of R.M.A.I. grade f.o.b. Cochin	254.78	258.14
7. Return	125.11	156.66
8. Total price for R.M.A. I grade to be retained by the growers	379.89	414.80
9. Cess existing	30.00	30.00
10. Price f.o.b. Cochin for consumers excluding sales tax	409.89	444.80

21.4. *Recommended Price.*—In the past, the Commission had based its recommendations for a fair price on the cost of production of the estates. This was done very largely because the costs of production were ascertainable only for this sector of the industry, and also because this sector was predominantly responsible for the production. Even on previous occasions the Commission was conscious of the fact that the costs of the small-scale sector were higher and for that purpose in the Commission's Report for 1951. An extra allowance of 15 per cent over the costs of the estates was allowed and weightage given in working out the cost of production of estates and small holdings. In the Commission's Report for 1960, however, it considered that the special weightage for small holdings was not necessary.

21.5. The position, however, has changed vastly since 1960 both in respect of the total production of the small scale sector and the degree of increased attention given by many small growers to improving their cultivation and providing the extra investment needed therefor. As stated earlier in our Report, immediate prospects of a large increase of production lie at present in the holdings and particularly holdings of, say 4—6 hectares (10-15 acres). We are of the view, therefore, that our recommendation on the fair price should be based on the costs of this sector.

21.6. We, therefore, recommend that a price of Rs. 415/- per 100 kgs. be fixed as the price to be retained by the growers f.o.b. Cochin for R.M.A. I Grade rubber. This will be exclusive of the sales tax and cess. The prices for other grades and for preserved latex will be after adjustment of the grade differentials or addition or deletion of the premia as indicated in Table 33 below :

TABLE 33

Group	Products	Differentials from R.M.A.I. Sheets
1	2	3
		Rs. per 100 kg.
Group 1	R.M.A. IX	..
	R.M.A. I	..
Group 2	R.M.A. 2	(—) 3.30
	R.M.A. 3	(—) 6.60
	Cuttings 1	(—)23.14
Group 3	R.M.A. 4	(—)14.32
	R.M.A. 5	(—)23.14
	Cuttings 2	(—)36.36
Group 4	Pre Coagulated crepe	(+)12.14
	Pale latex crepe IX	(+) 7.72
	Pale latex Crepe 1	(+) 3.32
	Pale latex Crepe 2	(+) 1.12
	Pale latex Crepe 3 F.A.Q.	(—) 1.08
Group 5	E.B.C. Super IX	(—) 9.92
	Estate Brown Crepe IX	(—)18.74
	Estate Brown Crepe 2X	(—)25.34
	Smoked Blanket	(—)18.74
	Remilled Crepe 2	(—)35.26
Group 6	Estate Brown Crepe 3 X	(—)42.98
	Remilled Crepe 3	(—)47.38
	Remilled Crepe 4	(—)59.52
Group 7	Flat Bark	(—)78.26

TABLE 33—*contd.*

1	2	3
		Rs. per 100 kg.
Preserved	Normal latex upto 35% Concentrates (excluding cost of container).	Price for R.M.A.I. plus a premium of Rs. 38.58 per 100 Kgs. of D.R.C.
Preserved	Latex Concentrates of 36% to 50% (both inclusive) (excluding cost of container).	Price for R.M.A.I. plus a premium of Rs. 72.76 per 100 Kgs. of D.R.C.
Preserved	Latex Concentrates of 51% to 60% (both inclusive) (excluding cost of container).	Price for R.M.A.I. plus a premium of Rs. 94.80 per 100 Kgs. of D.R.C.

21.7. *Prima facie* it will look as though this price will give the estates an unduly large profit. The figures would indicate an extra profit of about Rs. 34.91 per 100 kgs. However, something like half of this will go for taxation. Besides, since we have absorbed only half of the replantation cost of Rs. 23.34 in the price (and have in the following section recommended a lower quantum of subsidy) the estates will have to find an additional sum of Rs. 6.06 out of their profits. i.e. the realization, for the purpose of development. The extra profit on account of fixation of the fair price based on cost of production of holdings will, therefore, give the estates only a small extra margin which should be an incentive for bringing waste lands in estates under rubber and not utilized for the purpose of distribution as dividends.

21.8. As regards holdings of under 4 hectares (10 acres) whose costs of production will probably be higher than those of the bigger holdings, the margin of profit will really be larger than appears at first sight because the rehabilitation element of Rs. 11.67 will accrue to them as profit in the light of the enhanced subsidy for rehabilitation which we recommend in the following paragraph for this size of holding.

21.9. *Scale of subsidy for replantation.*—For replantation with high yielding materials, the Rubber Board at present gives a subsidy of Rs. 1,000/- per acre or Rs. 2,470/- per

hectare approximately. We recommend a revision in the grant of subsidy in the following scales :

- (a) For estates of 20 hectares (50 acres) and above Rs. 1250 per hectare
- (b) For holdings between 2 hectares (5 acres) and 20 hectares (50 acres) Rs. 2,500 per hectare
- (c) For holdings below 2 hectares (5 acres) Rs. 5,000 per hectare

We recommend a high subsidy for holdings of the smallest size, so that their lower profits may be recompensed with substantial improvement to their earning capacity in the future. Incidentally, this will also encourage an increase of production in a sector where prospects are fair. The Rubber Board has an immediate programme of replantation of 4047 hectares (10,000 acres) per year and in this connection, we have been informed that the *targets for replantation* have been fixed under the following two classifications:

TABLE 34

	1967-68 Area	1968-69 Area	1969-70 Area
1. Small growers with holdings of 6 hectares (15 acres) and below.	1,214 hectares (3,000 acres)	1,214 hectares (3,000 acres)	1,214 hectares (3,000 acres)
2. Growers with area above 6 hectares (15 acres).	2,833 hectares (7,000 acres)	2,833 hectares (7,000 acres)	2,833 hectares (7,000 acres)
	4,047 hectares (10,000 acres)	4,047 hectares (10,000 acres)	4,047 hectares (10,000 acres)

There are no reliable data available of the extent of lands which are planted with trees which have become too old to be productive or are likely to reach that stage in the next two or three years. We, therefore, base our recommendations regarding the total area to be replanted on the estimates furnished by the Rubber Board. We have, however, to consider the allocation of this annual target amongst holdings of the different sizes in order to work out the outlay needed for subsidies for replantation. The *distribution of the total area under rubber* as well as of the *mature areas amongst plantations of the different sizes* is as follows:

TABLE 35

Size of plantation	Total area in hectares			
	Ordinary	%	High yielding	%
Upto 20·23 hectares (50 acres)	57,936 (1,43,163)	70·6	43,929 (1,08,551)	53·2
20·23 hectares (50 acres) & above	24,169 (59,723)	29·4	38,679 (95,577)	46·8
TOTAL	82,105 (2,02,886)	100	82,607 (2,04,128)	100
<i>Mature area</i>				
Upto 20·23 hectares (50 acres)	47,706 (117,885)	68·5	21,845 (53,979)	50·7
20·23 hectares (50 acres) & above	21,929 (54,188)	31·5	21,228 (52,456)	49·3
TOTAL	69,635 (172,073)	100	43,073 (106,435)	100

[Figures in brackets are acres.]

The proportion as between estates and holdings for the mature area is almost the same as for the total area. The same proportion is maintained as between ordinary and high yielding varieties in these two classes of plantations. But both in the total area as well as in the mature area, the share of the small growers of area under ordinary trees is greater than the proportionate total area held by them. Holdings, therefore, are in greater need of replantation and replacement of ordinary varieties with high yielding varieties than the estates. According to the total area held by small growers, they would appear to be entitled to 62% of the replantation target, but in view of the fact that they hold 70.6% of the area under ordinary trees, their share should be 70% of the target fixed for the current and the next two years. We are, therefore, of the view that of the target of 4047 hectares (10,000 acres), 2833 hectares (7000 acres) should go to small growers and 1214 hectares (3000 acres) to estates. However, if estates are willing to replant a larger area and the Board can find the necessary funds, they may be allowed to do so. The target for small growers should, however, not be reduced. As between the two classes of the small growers, the area held under holdings upto 2 hectares (5 acres) is 51,433 hectares (127,093 acres) and under holdings between 2 and 20 hectares (5 and 50 acres) 50,432 hectares (124,621 acres). We do not have figures for mature areas in these two classifications. We suggest that the distribution of areas to be replanted as between these two classes of holdings should be equal. Based on this allocation the *financial burden on the Rubber Board* at the recommended scale will work out as follows :

TABLE 36

Area in Hectares (Acres)		Rate of subsidy per hectare	Amount in Rs./ lakhs
1	2	3	
		Rs.	Rs.
(a) Estates	1,214 hectares (3,000 acres)	1,250	15.18

TABLE 36—*contd.*

1	2	3
(b) Holdings 2.02 hectares (5 acres) to 20.23 hectares (50 acres).	1,416 hectares (3,500 acres)	2,500 35.40
(c) Holdings below 2.02 hectares (5 acres).	1,416 hectares (3,500 acres)	5,000 70.80
TOTAL	4,046 hectares (10,000 acres)	.. 121.38

The present cess recovered from the consumers is Rs. 300/- per tonne or Rs. 30/- per 100 kgs. which includes a specific development cess of Rs. 7/- per 100 lbs. or Rs. 15.43 per 100 kgs. and the amount of Rs. 13.77 per 100 kgs. levied as excise duty on rubber. With the reduction in the development cess from Rs. 15.43 to Rs. 11.67 per 100 kgs., the total cess including duty of excise comes to Rs. 25.44 per 100 kgs. Prior to the introduction of the additional cess as a result of the Commission's last inquiry, the Rubber Board used to give assistance for replantation out of Rs. 6.25 per 100 lbs. or Rs. 13.77 per 100 kgs. realised as excise duty. This levy is included in the total cess of Rs. 30/- per 100 kgs. but we do not know how much out of the Rs. 13.77 is actually used for the replantation subsidy. It is, however, obvious that the cess devoted to the replantation subsidy is far higher than Rs. 15.43 per 100 kgs. The total estimated subsidy at Rs. 121.38 lakhs per annum on average annual production of 63,000 tonnes for the next three years works out to a figure of Rs. 19.27 per 100 kgs.

21.10. Therefore, should the cess continue to be maintained at Rs. 300/- per tonne, there would be a margin of Rs. 10.74 per 100 kgs. We do not know what funds the Rubber Board would need for its normal activities and assistance to growers in the forms of free manures, subsidised fertilisers etc. The manufacturers have pressed us for a reduction in the cess. We would suggest that the position may be examined and appropriate decision taken.

21.11. It will appear superficially that due to our fixing the price at a figure somewhat higher than would have been justified if the costs of production of estates alone had been taken into account, the profits of the estates are larger than they should be. This, however, is offset to some account by the fact that half the depreciation on the trees is included in the cess out of which subsidies are to be paid. We have suggested that a smaller subsidy should be paid to estates than to holdings between 2 and 20 hectares (5 to 50 acres) to offset some of this profit. The difference of Rs. 1350/- in replantation costs could be met fully by the estates by setting aside a sum of Rs. 6/- per 100 kgs. out of these extra profits in reserve to be utilized for purposes of replantation. We recommend that this amount be treated as an additional amount of rehabilitation allowance for the purpose of agricultural income tax, provided it is set apart in reserve for purposes of replantation only.

21.12. *Exemption from agricultural income-tax.*—At present the rehabilitation allowance at the rate of Rs. 9/- per 100 lbs. or Rs. 19.84 per 100 kgs. is not included as an income for the purpose of the assessment of agricultural income tax in Kerala and Madras states. In the State of Mysore although the relief from taxation is not given in this form, a deduction under replanting cost, upto a maximum of $2\frac{1}{2}$ per cent of the plantation area held by a planter is allowed. The rehabilitation allowance included in the price structure is Rs. 11.67 per 100 kgs. and is lower than the figure of our previous recommendation. The relief of this element from taxation is expected to be covered by the existing legislation.

21.13. It was, however, represented to us that in Kanyakumari district of Madras State the levy of agricultural income-tax is still governed by the Travancore-Cochin Agricultural Income-tax Act of 1951 under which there is no provision for exempting the replanting expenses from taxation. We feel that this matter needs to be looked into, so that this area is brought on a par with the rest of the State in the matter of relief from taxation of the rehabilitation element.

21.14. *Cess and Sales tax.*—We recommend that the cess and Sales tax be excluded from the statutory prices.

CHAPTER 8

Summary

22. Our conclusions and recommendations are summarised
Summary of conclusions & recommendations as under :—

(i) During the last ten years, the area under rubber has almost doubled; it has gone up from 83,867 hectares (207,239 acres) to 164,712 hectares (407,014 acres) between 1955-56 and 1965-66. The most significant increase has been registered under holdings, the area of which went up from 36,288 hectares (89,670 acres) to 101,865 hectares (251,714 acres) for the same period.

[Paragraph 4.11]

(ii) A census of actual area under rubber with special reference to mature area should be undertaken by the Rubber Board with the assistance of Revenue authorities in order to make more reliable data available.

[Paragraph 4.11]

(iii) The Rubber Board's estimate of an average yield of 294 kgs. per hectare (262 lbs. per acre) in the small holdings sector is an under-estimate. It is desirable to devise more stringent measures of checking transactions by dealers to ensure not only the correct data of production but also the assessment of the cess actually due.

[Paragraph 4.11]

(iv) The replantation target for the current Five Year Plan is 20,234 hectares (50,000 acres) and is capable of achievement judging from the tempo of the last two years. At any rate every effort should be made to reach and even exceed it.

[Paragraph 5.2]

(v) The financial position of the Plantation Companies, as revealed by the balance sheet analysis of 15 companies engaged wholly or primarily in the production of rubber, is sound.

[Paragraph 6.2]

(vi) The quality of indigenous raw rubber is, on the whole good, especially in the case of supplies from larger estates and holdings.

[Paragraph 7.1]

(vii) The existing differentials in the prices of grades of rubber should be retained as they are.

[Paragraph 7.3]

(viii) As regards future demand for rubber, estimates are somewhat difficult, since the plan for future expansion of the tyre industry is still not settled. However, it is clear that the demand is likely to be of a very high order compared with the existing consumption.

[Paragraphs 10.2 & 10.4]

(ix) The shortage from 1970-71 onwards cannot be less than 30,000 tonnes and may be as high as 60,000 tonnes.

[Paragraph 12.2]

(x) For an orderly marketing of indigenous production, it is necessary that imports should come in regular monthly instalments and not as has happened during the latter half of 1966 in large quantities, just when the tapping of trees is at its height.

[Paragraph 13.2]

(xi) The Rubber Board should be consulted both on the volume and programming of imports. The imports should be evenly spread out over the year.

[Paragraph 13.2]

(xii) The future of rubber would appear to lie in large estates, good cultivation, high inputs and ever improving planting material and methods.

[Paragraph 15.1]

(xiii) Small-holders who can however cultivate isolated plots of small size profitably should be encouraged.

[Paragraph 15.2]

(xiv) Indigenous raw rubber cannot hope for all time to have a sheltered market. Such a market is not only a burden on the consumers, but will seriously prejudice the competitive capacity of Indian rubber manufacturing industry which like the raw rubber growing industry, has a great future. The answer is higher productivity.

[Paragraph 16.2]

(xv) Strenuous effort is needed if India is to become competitive in the production of raw rubber.

[Paragraph 16.5]

(xvi) Large scale rubber plantation in Andaman and Nicobar Islands would keep Indian rubber and rubber manufacturers competitive in the world markets and obviate the large drain on foreign currency which imports of raw rubber now involve.

[Paragraph 17.5]

(xvii) The cost of production is the only proper basis for fixing any price and particularly of a protected commodity.

[Paragraph 18.2]

(xviii) The costs of holdings of the size of 4.00 to 20.00 hectares (10 to 50 acres) are of importance to the future expansion of production.

[Paragraph 18.4]

(xix) Sole crepe is not regarded as natural rubber and so, has been excluded from the scope of cost examination.

[Paragraph 19.6]

(xx) In estimating the average yield per hectare per annum in respect of the costed estates and the holdings, the decrease in production due to the known replantation programmes and the

progressive increase in yield in the newly mature areas and the additional crop that would come from the areas that are expected to mature during the period of estimate have been taken into consideration. The simple average of estimated costs of the costed units has been treated as representative of the industry.

[Paragraph 20]

(xxi) The expenses incurred by a planter for replantation should be considered as capital investment and this replantation cost must be earned through the sale of rubber. One half of the development expenses (viz. Rs. 11.67) should be included in the retention price of the grower. A new scale of subsidy is recommended to be paid to the growers to enable them to meet the cost of replantation which will not be fully recovered through the retention price.

[Paragraphs 21.1 and 21.9]

(xxii) To provide for a reasonable incentive to small grower, a fair return should be Rs. 1,000/- per hectare. In addition to the yielding area, an area equivalent to approximately 20 per cent of the mature area has also to be maintained in the rubber and the return should cover this area of land also.

[Paragraph 21.2]

(xxiii) A price of Rs. 415/- per 100 kgs. should be fixed as the price to be retained by the growers f.o.b. Cochin for R.M.A. 1 grade rubber. This will be exclusive of sales tax and cess. The **prices for other grades and for preserved latex** will be fixed after adjustment of grade differentials indicated in Table 33.

[Paragraph 21.6]

(xxiv) A reduction in the cess needs to be considered by the Government.

[Paragraph 21.10]

(xxv) The rehabilitation allowance provided for replantation in Kanyakumari district of Madras State is not on a par with that in the rest of the State, and needs to be looked into by the Government of Madras.

[Paragraph 21.13]

We wish to express our thanks to growers of rubber, planters' associations, marketing societies, manufacturers of rubber goods **Acknowledgements.** and their associations, the Chairman, Rubber Board, the Rubber Production Commissioner, the State Government of Kerala, representatives of Government Departments and various other interests for their co-operation in the conduct of this inquiry.

M. P. PAI,
Chairman.

M. ZAHEER,
Member.

K. T. MERCHANT,
Member.

P. V. GUNISHASTRI,
Secretary.

BOMBAY,
Dated the 31st May, 1967.





सत्यमेव जयते

APPENDIX I

(Vide paragraph 1.1)

Immediate

No. 16(2) Plant (B)/65
Government of India
Ministry of Commerce

New Delhi, the 28th October, 1966

From

Shri V. K. Ahuja,
Joint Secretary to the Government of India.

To

The Secretary,
Tariff Commission,
C.G.O. Building,
101, Queen's Road,
Bombay-1.

SUBJECT 1—*Inquiry into the cost of production and fixation of rubber prices—
Reference to the Tariff Commission for.*

Sir,

I am directed to say that the rubber goods manufacturers have been complaining to Government about the abnormal rise in the prices of the indigenous raw rubber in the country. Until December 1963, minimum and maximum prices for various grades of natural rubber, fixed by Government from time to time were based on the Tariff Commission's recommendations. On 16-12-1963, however, following an announcement in Parliament by the Finance Minister of Government's decision to abolish price control over 12 commodities including natural rubber, the control on minimum or maximum prices of rubber was withdrawn. At the time of this decontrol, the minimum and maximum prices were Rs. 3,230 and Rs. 3,252 per tonne respectively for grade I rubber. Immediately following the decontrol, however, the Rubber Board strongly urged the desirability of some protection to the rubber growers, especially the small growers, against a fall in prices below the minimum prices previously in force. Discussions with the Finance Ministry revealed that the intention was not to withdraw the control which ensured a minimum price to the grower and that this protection should continue to be available to him. Accordingly the minimum prices for various grades which were in force before 16-12-1963 were reintroduced on 19-12-1963.

2. After the withdrawal of the control on the maximum prices for natural rubber, however, there has been a marked tendency for rubber prices to rise to abnormal levels especially when for reasons of foreign exchange shortage imports are restricted and the availability of raw rubber supplies to the manufacturers of rubber goods become inadequate to meet their requirements. For instance, owing to restricted imports in 1965, the price of RMA Grade I rubber touched an abnormal level of Rs. 6,500 per tonne, as against a floor price of Rs. 3,230 per tonne. It has, therefore, been suggested that this Ministry should consider re-imposing control on the maximum price of rubber. Fixation of ceiling prices for the various grades of rubber, however, requires detailed examination. It is considered that before the question of reintroduction of control on rubber prices is further looked into, a fresh enquiry into the cost of production of raw rubber by the Tariff Commission is necessary.

3. I am, therefore, to request the Tariff Commission under Section 12(d) of the Tariff Commission Act, 1951 to enquire into the cost of production of rubber and furnish its recommendation/report thereon to Government. We shall be grateful if this work could be completed within a period of two months if at all practicable.

Yours faithfully,

Sd/- (V. K. Ahuja)

Joint Secretary to the Government of India.



APPENDIX II

(Vide paragraph 2.2)

List of firms, associations etc. to whom the Commission's questionnaires and letters were issued and from whom replies/memoranda were received.

*Indicates those who have replied or sent memoranda.

**Indicates those who have stated that they are either not interested or unable to reply.

A. PLANTATION COMPANIES :

- *1. The Malayalam Plantations Ltd., Quilon, (Kerala).
- *2. The Cochin Malabar Estates Ltd., Calicut, (Kerala).
- *3. The Travancore Rubber and Tea Co. Ltd., Plamood Junction, Pattom Palace P. O., Trivandrum-4.
- *4. The Thirumbadi Rubber Co. Ltd., IV/143, Ballard Road, Cochin-1.
- *5. The Vaikundam Rubber Co. Ltd., TC/1695-D, Fathima Compound Pattom Palace, P. O., Trivandrum-4.
- *6. The Pullengode Rubber and Produce Co. Ltd., Pullengode, (Kerala).
- *7. The Anandam Rubber Co. Ltd., Kottayam, (Kerala).
8. The Athimattam Rubber Co. Ltd., Thodupuzha, (Kerala).
- *9. The Balanoor Tea and Rubber Co. Ltd., Gandhi Nagar, Bangalore City (Mysore).
10. The Be Be Rubber Estates Ltd., Punalur, (Kerala).
11. The Cottanad Plantations Ltd., Puthupadi, (Kerala).
- **12. The Calvery Mount Estates Ltd., Manjeri, (South Malabar, Kerala).
13. The Cavunal Rubber Estates Ltd., Kelachandras Buildings, Chingavanam, (Kerala).
- *14. The Desamangalam Rubber Estates Ltd., Annamalai's House Annexe Trichur-1, Kerala.
- *15. The Glenburn Estates Ltd., Crown Prince Hall, Coonoor, (Madras).
16. The Gokul Rubber and Tea Plantations Ltd., Kottayam, (Kerala).
17. The Edamon Estates Ltd., Kanjirappally, (Kerala).
18. St. Joseph Tea Co. Ltd., Thodupuzha, (Kerala).
19. The Jayachandra Rubber and Produce Co. Ltd., Adoor, (Kerala).
20. The Kuttanad Cardamoms Ltd., Calicut, (Kerala).
21. The Karimba Plantations Ltd., Palghat, (Kerala).

22. The Kailas Rubber Co. Ltd., Kottayam, (Kerala).
23. The Kuttanad Rubber Co. Ltd., Kainakary, Monkombu (Kerala).
- *24. The Kalpetta Estates Ltd., Calicut, (Kerala).
25. The Karikode Rubbers Ltd., Palai, (Kerala).
26. The Malabar Estates, Ltd., Alleppey, (Kerala).
27. The Mercara Rubbers Ltd., 8, Mc Nicholl's Chetpet, (Madras).
28. The Malabar Produce and Rubber Co. Ltd., Alleppey, (Kerala).
- *29. The Midland Rubber and Produce Co. Ltd., Alleppey, (Kerala).
30. The Mysore Plantations Ltd., Koppa-Kadur, Mysore.
31. The Malankara Rubber & Produce Co. Ltd., Kottayam, (Kerala).
32. The Marthoma Rubber Co. Ltd., Alleppey, (Kerala).
33. The Meerankhan and Sons Ltd., Mundakayam, (Kerala).
34. The Malabar Industrial Co. Ltd., Pathanapuram, (Kerala).
- *35. The Ruby Rubber Works (Bangalore) Ltd., formerly, The Manimala Estates Ltd., Rubynagar P. O., Changanacherry, Kerala.
- *36. The Nilambur Rubber Co. Ltd., Madras, C/o. M/s. Associated Planters Ltd., Beach Road, Kozhikode-1, (Kerala).
37. The Nellithanam Rubber and Produce Co. Ltd., Alleppey, (Kerala).
38. The National Planting Co. Ltd., Palai, (Kerala).
39. The New Ambadi Estates Ltd., 12, Cave Street, Nagercoil, (Madras).
40. The Nelliampathi Tea & Produce Co. Ltd., Alleppey, (Kerala).
- *41. The Nenmeni Rubber and Produce Co. Ltd., Kottayam, (Kerala).
- *42. The Portland Rubber Estates Ltd., 'Gomathy', Narasimharaj Mohalla, Mysore.
43. Messrs. Pothan Joseph and Sons Ltd., Alleppey, (Kerala).
44. The Pandalur Plantations Ltd., Pattikadu P. O., Palghat, (Kerala).
- *45. The Peninsular Plantations Ltd., Trivandrum, (Kerala).
- *46. The Padinjarekara Estates Ltd., Kottayam, (Kerala).
47. The Ponmudi Rubbers Ltd., Vallakadavau, Trivandrum-8, (Kerala).
48. The Periyar and Parikanni Rubbers Ltd., Palai, (Kerala).
- *49. The Rajagiri Rubber & Produce Co. Ltd., Alleppey, (Kerala).
50. The South Indian Estates and Industries Ltd., Calicut, (Kerala).
51. The Southern Plantations Ltd., Oyitty Road, Calicut, (Kerala).
- *52. The Teekoy Rubber (India) Ltd., Palai, (Kerala).
53. The Thamarappally Rubber Co. Ltd., Kottayam, (Kerala).
54. The Tropical Plantations Ltd., Kottayam, (Kerala).
55. The Travancore Rubbers Ltd., Kottayam, (Kerala).

56. United Rubbers Ltd., C/o. Agencies Ltd., Ernakulam Mills Building, Ernakulam, (Kerala).
- *57. The Vaniampara Rubber Co. Ltd., Trichur, (Kerala).
58. The Valparai Rubbers Ltd., Pallam, Kottayam, (Kerala).
59. The Vadakekalam Plantations Ltd., Mattancherry, Cochin, (Kerala).
60. The Venkulam Rubber Estates Ltd., Ranni, Perunad, (Kerala).
- *61. The Velimalai Rubber Co. Ltd., Kottayam, (Kerala).
62. The Woodland Rubber Estates Ltd., Meenathottathil Buildings Barton Hills Junction, Trivandrum, (Kerala).
63. The Panampunna Estates Ltd., Kottayam, (Kerala).
- *64. The Sunghai Plantations (Pvt.) Ltd., Kozhencherry, (Kerala).
55. The Thalayar Rubber Industries Ltd., Thalayar Estate, Thamarcherry P. O., Kerala.
66. The Manalur Rubber Co. Ltd., Asram Road, Changanacherry, (Kerala).
- *67. Plantation Corporation of Kerala Ltd., Malika, Chetty Street, Kottayam.
68. United Rubber Pvt. Ltd., Ernakulam Mills Buildings, Ernakulam-6.
69. Kurchermala Plantations Ltd., K. K. Road, Kottayam.
70. Malabar Agricultural Co. Ltd., Mg. Agents : Vimsons Ltd., Kottayam.
71. P. C. Ray, C/o. M/s. P. C. Ray & Co. Ltd., 4, Lion's Range, Calcutta.
- *72. *Manufacturer of Synthetic Rubber*, Synthetics & Chemicals Ltd., Skylark Building, 45-47, Apollo Street, Bombay-1. (Factory : Bareilly).

B RUBBER GROWERS (OTHER THAN COMPANIES) :

1. S Kumaraswamy, The Pioneer Works, Nagercoil.
2. N. A. M. Subramania Chettiar, Rayamvaram, Pudukotta, (Madras).
- *3. Kerala Estate, Kerala Estate P. O., S. Malabar, (Kerala).
4. P. J. Jacob, Mg. Prop. : Kainady Estate, Bank Road, Calicut, (Kerala).
5. K. M. Moidu Sahib, Moidu Rubber Estate, Kodoor P. O., Malapuram, (Kerala).
6. M. P. Cherian, Manamel Plantations, Pudupadi P. O., Malabar, (Kerala).
7. T. V. Kochuvareed, Planter, Trichur, (Kerala).
8. M. Mohamed Kunju M. M. K. Transports, Punalur, (Kerala).
9. Karimpanal Brothers, Kanjirapally, (Kerala).
10. Thomas Chacko, Kayalackakom, Pallathu Bunglow, Palai, (Kerala).
- *11. E. K. Mathew, Planter, Cheppad, Haripad.

12. J. Yesudasan, Clovelly Estate, Tuttapallam P. O., Nilgiris.
13. Mysore Lachia Setty and Sons, Coffee and Rubber Planters, Chigmalagalore.
- *14. Thomas E. Ramapuram, Chickemhully Estate, Siddapur, Coorg.
15. K. George Thomas, M. P. Kittukapallil, Palai.
16. K. Kunhi Koman, Natakkaal, Konnakad P. O., Trikarapur Via, (Cannanore Distt.), Kerala State.
17. V. K. Sankaran Nair, Timber Merchant and Commission Agent Nilambur, Malabar, (Kerala).
18. V. K. Abraham, T. C. 836, Rishimangalam, Trivandrum (Kerala).
19. Haji Koyappathody M. Ahmedkutty, Land Lord, Beach Road, Calicut-1. (Kerala).
20. D. T. D'Cruz, Watts Road, Cheriathurayil, Trivandrum-8.
21. P. J. Joseph, Mg. Prop. Philominapuram Estate, Koodathai P. O. Calicut, (Kerala).
22. P. R. M. Ramanathan Chettair, Mappadam, Rubber Estate, Mappadam, Ramavaramapuram, Trichur, (Kerala).
23. Claramma Mrs. A. C. M. Antharappar, Skinnerpuram Estate, Elamanur, P. O. (Via) Adur, (Kerala).
24. Nair Service Society, Changanacherry, (Kerala).
- *25. Haji N. R. Imbichi Moideen, Good Luck Estate, Pudupadi P. O. Calicut-6, Kerala.
26. K. K. Kuruvilla, Anathanam Estate, Kanjirapally, Kerala.
27. I. C. Chacko, Ex-Director of Industries Pulinkunnu, Kerala.
28. E. J. John, B.Sc., Prop. St. George Estate, Parathode, (Kerala).
29. P. A. Lawley, Foreman Instructor, Industrial Training Institute Pangode, Trivandrum, Kerala.
30. K. T. Varughese, Kalaikattil, Kaviyur, Thiruvella (Kerala).
31. George Commen, M.Sc., Thekkeveettil, Puthancavu, Chenganoor, (Kerala).
32. N. A. M. Kasi Chettiar, Mg. Partner, Pulinchimalai Estate, Camp: Kuzhithurai, Nagercoil, (Madras).
33. Jose A. Kallivayalil, Mundakayam, Kerala.
34. Joseph Jacob, B.A. B.L., T. B. Road, Kozhikode.
35. P. G. Gurjer, Koppa-Kadur P. O., Mysore.
36. J. Hudson Williams, Central Hotel, Trichur, Kerala.
37. P. K. Koruthu, Mg. Director, Marthandom Commercial Bank Ltd., Marthandom, Kerala.
38. Dr. K. E. Eapen, Kadamapuzha, Kanjirapally, Kerala.
39. K. V. Abraham, B.A., Karimpanal, Kanjirapally, Kerala.
40. P. C. Abraham, B.A., B.Com., LL.B., Padinjatekara, Kottayam, Kerala.

41. T. J. Mathew, B.A., C/o. T. J. Joseph, B.A., B.L., Retd. Dist t. Judge, Punalur, Kerala.
42. V. J. Joseph, M.A., Varapetty, Kothamangalam, Kerala.
43. P. G. Mathew, Retd. Engineer, Kylore, Olai, Quilon.
44. C. Ramaswamy Nadar, Ex-M.L.A., Koyilur Rama Vilas Bungalow, Vellarada P.O., Neyyattinkara.
45. M. K. Malathy, Indira Bhavan, Muttom P. O., Haripad, Kerala.
46. M. J. John, Karakunnu Bungalow, Padupadi, Kaithapoll, Calicut.
- *47. M. K. Jinachandran, M. P. Purakkadi Rubber Estate, Kalpetta North, South Wynad, Kerala.
48. P. J. Thomas, Panjikunnel Pravithanam, Palai, Kerala.
49. P. N. Narayanan Nambudiri, Pthumana Illom, Kurichithanam, Vazhoor, Kerala.
50. G. Barton-Wright, Orchard Dene, Trichur, Kerala.
51. A. P. Ninan & Sons, Mg. Prop. Atchencoil Estate, Katlthurutty P. O. Kerala.
52. M. D. Joseph, B.A. B.L., Mannipparambil, Kanjirappally, Kerala.
53. K. T. Chandy, Kuthuchira, Kadathuruthy, Kottayam.
54. J. John, Kattakkayam, Vellikulamgara, Trichur.
55. P. V. Chandy, Vijayapuram Estate, Parakode.
56. K. C. Chandy, Kotheplekal, P. O. Mallappally, Tiruvalla.
57. George Ipe, Lalitha Vilas, Mepral, Thiruvalla.
58. Manager, Little Flower Mount Estate, Bishop's House, Tiruvalla.
59. J. Kurien, Kalarickal, Nagapuram, Muttampalam, Kottayam.
60. K. J. Joseph, Kalluvayalil, Vilakkumadom, Poovarny, (Via Palai).
61. Unicheriathu Varkey, Paryaruthottam, Palai, Kerala.
- *62. Puthumana Estate, Velamcode (P. O.) Via. Tamaracheri, Kozhikode District, Kerala State.
- *63. Glenrock Estate, C/o. Rangamani & Co., Ratna Buildings, Alleppey, Kerala.
- *64. Bethany Estate, Mukampala Post, Via. Thukalay, Kanyakumari Rly. Station, Trivandrum.
- *65. Ramapuram Estates, Chickendbully Estate, Sidapur, Coorg.
- *66. M. Christdas, Chullimanur.
- *67. M. M. Syndicate, 10, Infantry Road, Bangalore-1.
68. Mrs. Rose Mary Mathew, Palamala Estate.
69. V. M. Joseph, Velliappallil, Pravithanam P. O., Palai, Kerala State.
- *70. Brother Blaise Mount Lourdes, Vattapara, Trivandrum-15.
71. A. Pothan, Varikad, Poonen Road, Trivandrum-1.
- *72. K. Threvikaraman Thampy, Sreekrishnavilasom Estate, Irinchayam, Kerala.

*73. K. Gopinathan Thampy, Sreekrishnavilasom Estate, Irinchayam, Kerala.

74. O. M. Alexander, Puthusserry, Puthenveedu, Kottayam-10.

Associations of Rubber Planters

1. The Secretary, Association of Planters of Kerala, Kottayam, Kerala.
- *2. The Secretary, United Planters Association of Southern India Coonor.
3. The Hon. Secretary, Rubber Growers' Association of India, Kottayam.
4. The Hon. Secretary, Quilon District Planters' Association, Punalur, (Kerala).
5. The Secretary, Trivandrum District Planters' Association, Sri Mulam Club Building, Trivandrum.
- **6. The Secretary, Central Travancore Agricultural Association, Kanjirappally, Kerala.
7. The Secretary, Association of Small Holders of Rubber Plantations, Kanjirappally, Kerala.
8. The Secretary, Association of Planters of the State of Madras, Coonoor.
9. The Secretary, Travancore Cochin Petty Holders' Association, Poovarany, Kerala.
10. The President, North Travancore Cochin Small Rubber Growers' Association, Arakunnam, Kerala.
11. The Hon. Secretary, Mundakayam Planters' Association, Mundakayam, Kerala.
- **12. The Hon. Secretary, Central Travancore Planters' Association, Vandiperiyar, Kerala.
13. The Hon. Secretary, South Travancore Planters' Association, Kalthurithy, Kerala.
- **14. The Secretary, Kanan Devan Planters' Association, Munnar, Kerala.
15. The Secretary, Nelliampathy Planters' Association, Munnar, Kerala.
16. The Secretary, Nilgri Planters' Association, Thiashola Estate, Kundat Bridge, P. O. Nilgiris.
17. Mysore Planters' Association, Mysore Bank Building, Chigmagalur.
18. The Kerala Rubber Small Holders' Association, Parakode (Kerala).
- *19. The General Secretary, Kerala Cherukida Rubber Karshaka Sangam, Central Office, Palai (Kerala).
- *20. The Kanjirappally Co-operative Rubber Marketing Society Ltd., No. K. 157, Kanjirappally P. O., Kerala State.
- *21. Palai Marketing Co-operative Society Ltd., Palai, Kerala State.

- *22. The Kottayam Co-operative Rubber Marketing Society Ltd., No. K. 258, Kottayam-1, Kerala.
- *23. Thodupuzha Taluk Co-operative Rubber Marketing Society Ltd., No. E. 222, Thodupuzha, Kerala.
- *24. Muvattupuzha Co-operative Marketing Society, No. 3094, Muvattupuzha, Kerala.
- *25. Meenachil Taluk Rubber Planters' Co-operative Society Ltd., Meenachil, (Kerala).
- *26. Kozhikode District Co-operative Rubber Marketing Society Ltd., No. F. 1879, Cherootty Road, Post Box No. 161, Calicut-1.
- *27. Malanad Karshak Union, Kerala State.

Consumers of Rubber (Rubber Goods Manufacturers)

- *1. M/s. Bata Shoe Co. (Pvt.) Ltd., Batanagar, 24-Parganas, West Bengal.
- 2. The Associated Rubber & Plastics Ltd., 55, Bentinck Street, Calcutta.
- *3. The Bengal Waterproof Works (1940) Ltd., 41, Shakespeare Sarani, Calcutta-16.
- *4. Kadar Rubber Manufacturing Co. Ltd., 46-B, Shakespeare Sarani, Calcutta-16.
- 5. M/s. Hind Rubber Works, 175, Bibi Bagani Lane, Tangra, Calcutta-15.
- 6. East India Rubber Works, 161, Chittaranjan Avenue, Calcutta-7.
- 7. The Indian Rubber Manufacturers Ltd., 11 and 12, Esplanade Mansion, Calcutta-1.
- *8. The Indian Cable Co. Ltd., 9, Hare Street, Calcutta.
- *9. M/s. Kohinoor Rubber Works, 35/1A, Canal East Road, Calcutta-11.
- *10. National Rubber Manufacturers Ltd., Leslie House, 19, Chowringhee Lane, Calcutta.
- 11. The National Insulated Cable Co. of India Ltd., Post Box 594, Nico House, Hare Street, Calcutta-1.
- *12. The Central Rubber Works Ltd., 20-B, Tangra Road, Calcutta-15.
- *13. The New India Rubber Works Ltd., 34-A, Chingrighatta Road, Calcutta.
- 14. Associated Industries Ltd., Go Go Road, Bhavnagar.
- 15. The Gujarat Rubber Works Ltd., Pratap Nagar, Baroda.
- *16. Swastic Rubber Products, Opp. Kirkee Rly. Station, Kirkee, Poona-3.
- 17. Korula Rubber Co. Ltd., 249-A, Worli, Bombay-18.
- *18. Oriental Rubber Industries, Agra Road, Bhandup, Bombay.
- 19. International Rubber and General Industries Ltd., G. P.O. Box No. 843, 89, Marine Drive, Bombay.
- 20. Carona Sahu Co. Ltd., 143, Mahatma Gandhi Road, Fort, Bombay-1.
- *21. Nanco Rubber & Plastics Ltd., P. B. No. 242, Coimbatore.

- *22. Madras Rubber Factory Ltd., Dhun Building, 175/1, Mount Road, P. B. 3760, Madras-2.
- *23. Ruby Rubber Works, Rubynagar, Changanacherry (Kerala).
- *24. Trivandrum Rubber Works, Trivandrum-7.
- 25. National Tyre & Rubber Co. of India Ltd., Post Box No. 17, Kottayam.
- 26. South India Rubber Works, Post Box No. 32, Alleppey, Kerala.
- 27. Amco Batteries Ltd., Badami House, Narasimharaja Square, Bangalore.
- *28. The Bharat Battery Mfg. Co. Ltd., 238/A, Acharya Jagdish Ch. Bose Road, Post Box No. 273 G. P. O., Calcutta-20.
- *29. Associated Battery Makers (Eastern) Ltd., 59 C, Chowringhee Road, Calcutta-20.
- 30. Standard Batteries Ltd., 43, Forbes Street, Bombay-1.
- **31. The General Lead Batteries Co. Ltd., 9-A, Ramdhone Mitra Lane, Calcutta-4.
- *32. M/s. Fenner Cockill Ltd., Post Box No. 117, Madurai.
- *33. M/s. Modak Rubber Products Pvt. Ltd., Kondivatta Road, Marol Bazar, Andheri Kurla Road, Bombay-59AS.
- 34. Supreme Industries Ltd., Wadala, Bombay-31.
- **35. The Hindusthan Brown Boveri Ltd., Thackersey House, Graham Road, Ballard Estate, Bombay-1.
- 36. Devidayal Cable Industries (P) Ltd., Gupta Mills Estate, Darukhana, Reay Road, Bombay-10.
- 37. M/s. National Rubber Works, 171/A, Mahatma Gandhi Road, Calcutta-7.
- 38. M/s. Basant Rubber Factory, Opp. Sion Rly. Station, Bombay-22.
- *39. The Dunlop Rubber Co. (India) Ltd., 57-B, Free School Street, Post Box No. 391, Calcutta-16.
- *40. The Firestone Tyre & Rubber Co. of India (Pvt.) Ltd., Hay Bunder Road, Post Box No. 197, Bombay-1.
- 41. Asian Cable Corporation Ltd., 254/D2, Dr. Annie Beasant Road, Worli, Bombay-18.
- 42. Associated Rubber & Plastic Works, 1, M. M. Ghose Road, Dum Dum, Calcutta-28.
- 43. B. N. Rubber Works, 9, Barakhamba Road, New Delhi.
- *44. Bedrock Tyre & Rubber Co. Masjid Manor, 16, Bruce Street, Bombay-1.
- 45. Bharat Cables Pvt. Ltd., 11, Bruce Street, 2nd Floor, Bombay-1.
- 46. Bharat Rubber Industries, Naganul Hanuman Road, Rakhial, Ahmedabad-21.
- 47. Bombay Cable Co. Pvt. Ltd., United Bank of India Bldg., 6th Floor Sir P. M. Road, Bombay-1.

- *48. Ceat Tyres of India Ltd., Bhandup, Bombay-78.
- 49. Central Rubber Works Pvt. Ltd., 20/B, Tangra Road, Calcutta-15.
- *50. Cosmos India Rubber Works P. Ltd., 7, Homji Street, Bombay-1.
- *51. Darbar Vulcanising Works, Post Box No. 1112, Near Sarangpur Bridge, Ahmedabad-2.
- 52. Devidayal Cable Industries Pvt. Ltd., Pokhran Valley, P. B. No. 39, Thana.
- 53. Dial Rubber Works, Sonawala Cross Road, Goregaon (East) Bombay-62 NB.
- 54. Diamond Rubber Works Pvt. Ltd., 276, Nagdevi Street, Bombay-3.
- *55. Dominion Rubber Co. Pvt. Ltd., 1, Kundan Lane, Liluah (Howrah).
- 56. Enkay (India) Rubber Co., 161, Chittaranjan Avenue, Calcutta-7.
- *57. Everest Rubber Works, 2, Kalibari Road, Dum Dum Jn, Calcutta-30.
- *58. Good Shepherd Rubber Co. Industrial Estate, Olavakkot (Kerala).
- 59. Hind Rubber Industries Pvt. Ltd., Suryodaya Mills Compound, Tardeo, Bombay-7.
- 60. Hind Rubber Works, 17, Bibi Bagan Lane, Calcutta-15.
- *61. Hindustan Rubber Works, 402, Cadell Road, Bombay-28.
- *62. Hindustan Rubber, Works Ltd., 14, Ballygunge, Station Road, Calcutta-19.
- 63. Imperial Tyre & Rubber Co. P. Ltd., Bombay Agra Road, Vikhroli, Bombay-79.
- *64. Ind Com Limited, Rubber Division. P-16, Kalakar Street, Calcutta-7.
- 65. India Rubber Goods Mfg. Co., 47, Muraripukur Road, Calcutta.
- 66. Industrial Linings, Kavarana Bldg., 547, Kalbadevi Road, Bombay-2 BR.
- *67. Industrial Supplies Corporation, Sakinaka, Kurla-Andheri Road, Bombay-70.
- *68. International Rubber Mfg. Co., 51, Radha Nath Chaudhury Road, Calcutta-15.
- 69. International Rubber Mills, P. O. Box No. 56, Bhagpat Road, Meerut City.
- *70. Jai Hind Rubber Products P. Ltd., P. B. No. 1372, Bombay-1.
- 71. Kale Rubber Works Pvt. Ltd., 56, Bhajipala Lane, Bombay-3.
- *72. Kirti Rubber Works, 205/207, Swami Vivekanand Road, Jogeshwari, Bombay-60.
- *73. M. M. Rubber Co., 1st Floor, Dhun Bldgs. 175/1, Mount Road, Madras-2.
- 74. M. S. Rubber Co. 81/A, Manicktolla Street, Calcutta.
- *75. Madras Rubber Factory Ltd., P. B. No. 3760, Dhun Bldgs., 1st Floor, 175/1, Mount Road, Madras-2.

76. Moti Electric Industries, 15-A, Najafgarh Road, New Delhi.
77. National India Rubber Works Ltd., Katni (M. P.).
78. National Rubber Mfrs. Ltd., Leslie House, 19, Chowringhee, Calcutta-13.
79. New India Cable Corpn., Shri Laxmi Woollen Mills Estate, Off Haines Road, Bombay-11.
80. New Modern Rubber Works, 3, Khetwadi, 9th Lane, Bombay-4.
81. Northern India Rubber Mills, P. O. Dinanagar, Dist. Gurdaspur.
82. Organo Chemical Industries, 160, D. Naoroji Road, Bombay-1.
83. Oriental Rubber Works, 171A, Mahatma Gandhi Road, Calcutta-7.
- *84. Phoenix Rubber Works, Old Banaras Road, Belgachia, Howrah.
85. Pioneer Rubber Mills (Bombay) Ltd., Bombay-Agra Road, Bombay-78.
- *86. Premier Rubber & Cable Industries, Jamal Bldg., 211, Nagdevi Street, Bombay-3.
- *87. Premier Tyres Ltd., Maneckjee Wadia Bldg., 127, Mahatma Gandhi Road, Bombay-1.
88. Purohit Rubber Works, 13-D, Kurla Industrial Estate, Nari Seva Sadan Rd., Off Agra Rd., Ghatkopar, Bombay-77.
89. R. B. S. Rubber Mills Pvt. Ltd., Jwalaprasad Park, Liluah, Howrah.
90. Radiant Rubber Industries Pvt. Ltd., Green House, 2nd Floor, Green Street, Bombay-1.
91. Rubber Industries (India), 243, Abdul Rehman Street, Bombay-3.
92. Rubberex Industries Pvt. Ltd., 'B' Anjir Wadi, Mount Road, Mazagaon, Bombay-10.
- *93. S. G. R. Industries Pvt. Ltd., 10, The Mall, Dum Dum, Calcutta-28.
- *94. Saco Rubber Pvt. Ltd., Saco House, P. O. Box No. 70, Amritsar.
95. Saroj Industrial Works, Navjivan Mills Compound, Kalol (N. Gujarat).
96. Serampore Belting Works Ltd., 52, J. N. Lahiri Road, Serampore (Hoogly).
- *97. Samsher Sterling Cable Corporation Ltd., Vaswani Mansion, Dinshaw Vachha Road, Bombay-1.
98. Shree Krishna Rubber Works Pvt. Ltd., 5, Mission Row, 1st Floor, Calcutta-1.
- *99. Simplex Rubber Products Pvt. Ltd., Opp. Electric Grid Station, Amraiwadi, Ahmedabad-8.
100. South India Rubber Works, P-36, India Exchange Place, Calcutta-1.
101. T. Maneklal Mfg. Co. Ltd., Vaswani Mansion, Dinshaw Vachha Road, Bombay-1.

102. Todi Industries Pvt. Ltd., Vishwa Mahal, C. Road, Churchgate Backbay Reclamation, Bombay-1.
103. Vasant Engineering Ltd., Pratapnagar, Baroda-4.
- *104. National Engineering Industries Ltd., (Rubber Division), 2, Beerpara Lane, Dum Dum Road, Calcutta-30.
105. Poly Rubber Industries, Patawvala Compound, Opp. Sanghani Estate, Bombay Agra Road, Ghatkopar, Bombay-77.
106. Vidyut Cable & Rubber Industries, Sonawala Estate, Goregaon East, Bombay-62.
107. The General Rubber Co. Pvt. Ltd., P. B. No. 490, New Delhi-1.
108. Allied Rubber Works, Karapuzha, Kottayam.
109. National Industries, S/64, Municipal Industrial Estate, Bapunagar Ahmedabad-21.
110. Rubber Products Pvt. Ltd., Chincholi Naka, Swami Vivekanand Road, Malad, Bombay-64.
111. Sawtiney Rubber Industries, 616, Honey Road, Delhi.
112. Jai Bharat Rubber Industries, 32, Debendra Chandra Day Road, Calcutta-15.
113. Jagmohan Brothers, 8, Vishvashnear Nagar, Darey Road, Goregaon East, Bombay-62.
114. Modern Rubber Manufacturers Pvt. Ltd., 12-1-B, Hindsay Street, Calcutta-16.
115. M/s. Fort Gloster Industries Ltd., Cable Division, 14, Netaji Subhas Road, Calcutta-1.
- *116. M/s. Goodyear India Ltd., 209 Acharyya Jagadish Bose Road, Calcutta-17.
- *117. M/s. Inchek Tyres Ltd., 'Leslie House' 19, Jawaharlal Nehru Road, Calcutta-13.
- *118. M/s. India Rubber Goods Mfg. Co., 30-H-2 Canal East Road, Calcutta-11.
- **119. M/s. Rubber Products & Moulding Company, 9-A, Bechulal Road, Entally, Calcutta-46.
120. M/s. Olympia Rubber Works, 10, Paymental Garden Lane, Calcutta-15.
- *121. Goodyear India Ltd., Post Box No. 6272, Tiecicon House, 18, Haines Road, Bombay-11.
122. India Tyre and Rubber Co. P. Ltd., Post Box No. 6523, Bombay-26.
123. Vikasco Rubber Products (India), Shanti Nagar, Vakola, Santa-cruz, Bombay-55.
- **124. Kamani Metals & Alloys Ltd., Agra Road, Kurla, Bombay-70.
125. Kilachand Devchand & Co. Pvt. Ltd., 45/47, Apollo Street, Fort, Bombay-1.

CONSUMERS' ASSOCIATIONS :

- *1. The Association of Rubber Mfrs. in India, 57-B, Free School Street, Calcutta-16.
- *2. Indian Rubber Industries Association, 12, Rampart Row, Fort, Bombay-1.

AUCTIONEERS :

- *1. Forbes, Ewart & Figgs (Pvt.) Ltd., P. O. Box No. 45, Willingdon Island, Cochin-3.
- *2. Carrit Moran & Co. Pvt. Ltd., Cochin, Kerala State.

MISCELLANEOUS :

- *1. J. H. Williams, Central Hotel, Trichur, Kerala.
- *2. A. K. M. Pillai, Gokul, Palace Road, Quilon.

GOVERNMENT DEPARTMENTS :

- *1. The Secretary to the Govt. of India, Ministry of Commerce, Udyog Bhavan, New Delhi.
- *2. The Secretary, Rubber Board, Kottayam, Kerala State.
- *3. The Secretary to the Govt. of India, Ministry of Labour, Employment & Rehabilitation, (Labour Bureau), New Delhi.
- *4. Dr. A. Setharamiah, Industrial Adviser (Rubber), Directorate General of Technical Development, (Rubber Directorate), Udyog Bhavan, New Delhi.
- *5. Director (Chemicals), Indian Standards Institution, Manak Bhavan, Bahadur Shah Zafar Marg, New Delhi-1.
- *6. Chief Secretary to the Govt. of Kerala, Trivandrum, Kerala.
- 7. Secretary to the Govt. of Madras, Industries, Labour and Housing Department, Madras.
- *8. The Chief Secretary to the Govt. of Mysore, Bangalore.
- 9. The Chief Commissioner, Andaman & Nicobar Islands, Port Blair.
- 10. The Secretary, Basic Chemicals, Pharmaceuticals & Soaps Export Promotion Council, Jhansi Castle, 7, Cooperage Road, Bombay-1.
- *11. The Secretary, Chemicals and Allied Products Export Promotion Council, Calcutta-1.
- 12. The Secretary, Sports Goods Export Promotion Council, New Delhi-1.
- 13. The Chief Executive Officer, All India Handicraft Board, Science Pavilion, Mathura Road, New Delhi.
- *14. The Collector of Customs, New Custom House, Bombay-1.
- *15. The Collector of Customs, Custom House, Cochin.

- *16. The Collector of Customs, Custom House, Calcutta.
- *17. The Collector of Customs, Custom House, Madras.
- 18. The Second Secretary (Commercial) to the Embassy of India, Djakarta (Indonesia).
- 19. The Counsellor (Commercial) to the Commission for India in Malaysia, United Bank Building, 19, Malacca Street, Kuala-Lumpur.
- 20. The Attache (Commercial), Thailand, Bangkok.
- *21. The First Secretary (Commercial) to High Commission of India in Ceylon, P. B. No. 1487, Colombo-3.
- *22. The Counsellor (Commercial) to the High Commission of India in U. K., India House, Commerce Department, London, W.C. 2.
- 23. The First Secretary to the Embassy of India, Buiten, Rustwag-2.
- *24. The First Secretary (Commercial) to the Embassy of India in Germany, 262, Koblenzer Strasse, Bonn (West Germany).
- *25. The First Secretary (Commercial) to the Embassy of India, 2, Rue Godot-de-Maurey, Paris-9.
- 26. The First Secretary (Commercial) to the High Commission of India in Canada, 200 MacLaren Street, Ottawa-4, Canada.
- *27. The Consulate General of India, 3, East 64th Street, New York-10021.
- *28. The First Secretary, Commercial to the Embassy of India, Vis, Francisco Deze 36, Rome.
- 29. The Joint Director (Export Promotion), Office of the Joint Chief Controller of Imports and Exports, Bombay-1.
- 30. The Deputy Chief Controller (Export Promotion), Office of the Joint Chief Controller of Imports and Exports, Calcutta.
- *31. The Deputy Chief Controller (Export Promotion), Office of the Joint Chief Controller of Imports and Exports, Madras.
- 32. The Joint Chief Controller of Imports and Exports, Panjim (Goa).
- *33. The Deputy Chief Controller (Export Promotion), Ernakulam.
- 34. Dr. Rama Varma, Director (Marketing), Food Corporation of India, Madras-6.
- 35. The Manager of Publications, Government of India, Civil Lines, Delhi-6.

APPENDIX III

(Vide paragraph 2·4)

List of persons who attended the public in quiry on 5th/6th April, 1967

A. PRODUCERS :

Name	Representing
1. Shri R. H. Paylor*	Malayalam Plantations Ltd.
2. „ S. Subramanian	Vaikundam Rubber Co. Ltd.
3. „ Sharma	Travancore Rubber & Tea Co. Ltd.
4. „ Krishnakumar	Plantation Corporation of Kerala Ltd.
5. „ K. G. Rao }	A. V. Thomas & Co. Ltd.
6. „ A. R. C. Paul }	
7. „ Rama Krishna Sharma	Peninsular Plantations Ltd.
8. „ D. S. Herbert	Thirumbadi Rubber Co. Ltd.

SYNTHETIC RUBBER MANUFACTURERS

9. Shri V. C. Manavati }	Synthetics & Chemicals Ltd.
10. „ K. B. Dabke }	

*Also representing UPASI.

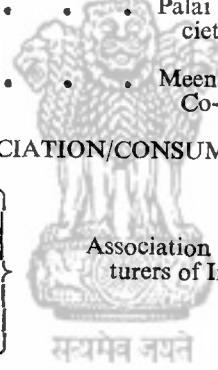
B. PRODUCERS' ASSOCIATIONS :

1. Shri M. R. M. Punja	United Planters' Association of Southern India (UPASI).
2. „ V. I. Chacko	
3. „ C. Mitchell	
4. „ M. M. Verghese	
5. „ R. H. Paylor	
6. „ P. J. John	

APPENDIX III—*contd.*

Name	Representing
7. Shri Joseph	Kanjirapally Co-operative Rubber Marketing Society.
8. Prof. K. M. Chandy	Palai Marketing Co-operative Society Ltd., Kottayam Co-operative Rubber Marketing Society Ltd. and Cherukida Rubber Karshaka Sangam.
9. Shri T. J. Joseph	Palai Marketing Co-operative Society Ltd.
10. „ C. J. Kappan	Meenachil Taluk Rubber Planters, Co-operative Society.

C. CONSUMERS ASSOCIATION/CONSUMERS :

1. Shri Cecil Stack* 2. „ M. L. Capoor* 3. „ N. G. Dutt@ 4. „ A. Tealdo = 5. „ P. F. Daviesf 6. „ D. Bose ** 7. „ A. T. Mathyoo	 Association of Rubber Manufacturers of India (ARMI), Calcutta.
8. Shri K. M. Philip + 9. Dr. K. N. Modak 10. Shri B. B. Sangtani 11. „ L. M. Jamnadas 12. „ N. K. Patel 13. „ V. N. Makar 14. „ D. S. Kulkarni	
15. Shri G. L. Anderson 16. „ F. J. Reighley	
17. M. N. Mehta	
18. „ T. C. Satyanāth	
19. „ J. B. Jijibhoy 20. „ C. L. Pasricha 21. „ C. S. Desai	
	Indian Rubber Industries Association (IRIA), Bombay.
	Firestone Tyre & Rubber Co.
	Ceat Tyres of India Ltd.
	Goodyear India Ltd.
	Premier Tyres Ltd.

APPENDIX III—*concl'd.*

Name	Representing
22. Shri H. C. Dewan . . .	Bata Shoe Co. Pvt. Ltd.
23. „ R. V. Nakhate . }	Swastik Rubber Products Ltd.
24. „ B. R. Yawatkar . }	
25. „ S. G. Pandit . . .	Modak Rubber Products Pvt. Ltd.
26. „ M. S. Vohra . . .	Premier Rubber & Cable Industries.

*Also representing Dunlop.

@Also representing Firestone.

=Also representing Ceat.

£Also representing Goodyear.

**Also representing Bengal Waterproof.

+Also representing Madras Rubber Factory.

D. GOVERNMENT DEPARTMENTS :

- | | |
|--------------------------------|---------------------------|
| 1. Shri P. S. Habeeb Mohamed . | } Rubber Board, Kottayam. |
| 2. „ T. V. Joseph . | |
| 3. Dr. K. T. Jacob . | |
| 4. Shri V. Bhaskaran Pillai . | |
| 5. Dr. Seetharamiah . | } D.G.T.D., New Delhi. |
| 6. „ N. V. C. Rao . | |
| 7. Shri A. K. K. Nambiar . | Government of Kerala. |
| 8. „ K. Venkata Krishnan . | Government of Madras. |