

Rubber Board Ann Rep. 2003-04

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Rubber Research Institute of India



NRETC Complex Agartala



Training Centre



वार्षिक रिपोर्ट
ANNUAL REPORT
2003-2004



रबर बोर्ड
THE RUBBER BOARD



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ANNUAL REPORT 2003-2004



THE RUBBER BOARD
Ministry of Commerce & Industry
Govt. of India

भारत
संस्थान
of India
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ANNUAL REPORT
2002-2003

THE BOARD
OF DIRECTORS
OF THE
INSTITUTE OF TECHNOLOGY
MADRAS

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ANNUAL REPORT
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PART I

INTRODUCTION

The Rubber Board was constituted by the Government of India as a body corporate under the Rubber Act 1947 with the primary objective of the overall development of the rubber industry in the country. Natural rubber often referred to as nature's most versatile raw material is obtained from the latex produced by "*Hevea brasiliensis*". This raw material finds its use in about 35,000 products and contributes substantially to the industrial and economic development of the country. The Board established a strong development and extension network and as a result, the rubber plantation sector achieved an impressive all-round growth in expansion of area and increase in production and productivity. Simultaneously, the Board gave thrust to research also and the Rubber Research Institute of India (RRII) was established in 1955 for carrying out research on biological and technological improvement on rubber.

The Board has been encouraging scientific planting of rubber right from its inception and since the sixth plan period, an integrated scheme for development of rubber plantations, namely, the Rubber Plantation Development Scheme for promoting both newplanting and replanting has been in operation and this is rated by the World Bank as one of the successful schemes. Besides, development and extension support is given to growers for increasing productivity, improving the quality of produce through individual as well as community efforts, facilitating formation of grass roots level organizations of growers and empowering them to ensure sustainable development through rubber cultivation. The development of rubber plantation in non-traditional region, especially in north-eastern states has also achieved significant growth where rubber development is taken up adopting an integrated

approach. Special mention needs to be made about the rubber based settlement programmes for tribal shifting cultivators in the north-east and in other states such as Orissa, Andhra Pradesh, Karnataka and Kerala ensuring overall socio-economic development/eco-restoration.

The Board has also been adopting several measures to promote diversified as well as non-conventional uses of natural rubber by supporting rubber products manufacturing sector, extending assistance for skill upgradation and infrastructure development.

The Rubber Research Institute of India has made significant contributions by breeding and releasing the popular clone RR11 105, one of the highest yielding clones in the world. Four new clones under RR11 400 series having a potential yield of more than 2500 kg. per hectare have been released by the RRII. The RRII has also evolved agro-technologies on various cultural practices on 'Hevea'. The Institute has made substantial contribution in improving the processing of rubber and evolving speciality rubbers, which can effectively substitute synthetic rubbers. Research on special environment protection systems to check pollution in processing factories, energy saving mechanisms for processing, processing of rubber wood, ancillary income generation activities and rubber based cropping system has yielded useful results.

PERFORMANCE DURING 2003-04

Production Sector

During 2003-04, the Indian rubber plantation industry emerged from a long sluggish period by registering remarkable growth in production and



productivity. As against 0.2 percent growth during 2001-02 and 2.9 percent during 2002-03, the growth achieved in Natural Rubber (NR) production during 2003-04 was 9.6%, the highest in the decade. During 2003-04, the country produced 711,650 tonnes of NR as against 649,435 tonnes produced in 2002-03. Improved prices of NR coupled with favourable weather conditions, had mainly contributed to the robust growth in production during 2003-04. Expansion in the tapped area of NR plantations, better adoption of agro-management practices are other major factors for the increased production during the year. As a result, the productivity of NR during 2003-04, estimated in terms of average yield per hectare, increased from 1592 kg. during 2002-03 to 1663 kg, the highest in the world.

Consumption Sector

Demand for NR in the country continued to increase during 2003-04 registering 3.5% growth. Total consumption of NR by the rubber goods manufacturing industry was 719,600 tonnes during 2003-04 as against 695,425 tonnes during 2002-03. The rate of growth in consumption of NR in the dominant auto tyre manufacturing sector was 7.1% during 2003-04 compared to 16% during 2002-03. However, the demand growth of NR in the general rubber goods sector declined from 2.6% during 2002-03 to negative 0.3% during 2003-04.

The production, consumption and growth rate of natural rubber for the year 2003-04 and the immediately preceding two years are –

Import & Export of NR

As per the data collected, the imports during 2003-04 surged to 44,199 tonnes from 26,217 tonnes in 2002-03. An important development in Govt. Policy towards import of NR that took place during the year 2003-04, was the removal of the ban on import under Advance Licence Scheme. Government restored the facility for duty free import of NR in July 2003 and further from 9th January 2004 reduced the basic customs duty on NR from 25% to 20% and abolished the Special Additional Duty (SAD) of 4%.

The country's export of NR touched 75,905 tonnes during 2003-04, a substantial increase from 6,995 tonnes exported in 2001-02 and 55,311 tonnes in 2002-03. The main factors contributing to the buoyancy in export were the export promotional measures adopted by the Govt. of India and the prevalence of relatively higher NR prices in the international market since June 2003.

Price of NR

Natural rubber prices both in the domestic as well as in the international markets remained appreciably high during 2003-04. In the domestic market, export of NR contributed to the uptrend in prices. The average annual price of RSS-4 grade sheet rubber was Rs.5,040/- per 100 kg during 2003-04 as compared to Rs.3,919/- per 100 kg during 2002-03. The maximum price realized for RSS-4 grade sheet rubber during the year was Rs.5,650/- per 100 kg on 25th February 2004, the highest price quoted in the last several years. During the period from April to June 2003 Indian price of RSS-4 grade was higher than the

Year	Production (in MT)	Growth rate	Consumption (in MT)	Growth rate
2001-02	6,31,400	0.2%	638,210	1.1%
2002-03	6,49,435	2.9%	6,95,425	9%
2003-04	7,11,650	9.6%	7,19,600	3.5%



international price of the equivalent grade RSS-3, and from July 2003 onwards the Indian prices started ruling below the international prices.

In the international market also the NR prices kept a high tone during 2003-04. Bangkok market price of RSS 3 grade rubber considered as equivalent to Indian RSS-4, rose sharply in October 2003. The price touched an all time high of Rs.6,633/- per 100 kg on 4th November 2003. The annual average price of RSS-3 during 2003-04 was Rs.5,278/-per 100 kg. The main factor behind the uptrend in the international price was the depletion of world NR stock leading to supply

demand imbalance. Erosion in the value of US dollar against the currencies of major NR exporting Asian countries had also propelled the prices.

The yearly average price of RSS-4 grade rubber for the last three years was –

Year	Price per quintal
2001-02	Rs.3,228/-
2002-03	Rs.3,919/-
2003-04	Rs.5,040/-



PART II

CONSTITUTION AND FUNCTIONS

CONSTITUTION OF THE BOARD

As per Section 4 (3) of the Rubber Act 1947, the Board shall consist of -

- a) A Chairman to be appointed by the Central Government;
- b) Two members to represent the State of Tamilnadu, of whom one shall be a person representing the rubber producing interests;
- c) Eight members to represent the State of Kerala, six of whom shall represent the rubber producing interests, three of such six being persons representing the small growers;
- d) Ten members to be nominated by the Central Govt., of whom two shall represent the manufacturers and four labour;
- e) Three members of Parliament, of whom two shall be elected by the Lok Sabha and one by the Rajya Sabha;
- f) The Executive Director (ex-officio); and
- g) The Rubber Production Commissioner (ex-officio).

The position of Executive Director has not been filled so far.

List of members of the Board as on 31.3.2004 is given at the end of this report.

FUNCTIONS OF THE BOARD

The functions of the Board as laid down under Section 8 of the Rubber Act 1947 are -

- (1) to Promote by such measures as it thinks fit the development of the rubber industry.

(2) the measures may provide for -

- a) undertaking, assisting or encouraging scientific, technological and economic research;
- b) training students in improved methods of planting, cultivation, manuring and spraying;
- c) the supply of technical advice to rubber growers;
- d) improving the marketing of rubber;
- e) the collection of statistics from owners of estates, dealers and manufacturers;
- f) securing better working conditions and the provisions and improvement of amenities and incentives for workers; and
- g) carrying out any other duties which may be vested in the Board under rules made under the Act.

(3) It shall also be the duty of the Board -

- a) to advise the Central Govt. on all matters relating to the development of rubber industry, including the import and export of rubber;
- b) to advise the Central Govt. with regard to participation in any international conference or scheme relating to rubber;
- c) to submit to the Central Govt. and such other authorities as may be prescribed half yearly reports on its activities and the working of the Act; and
- d) to prepare and furnish such other reports relating to the rubber industry as may be required by the Central Govt. from time to time.



Seven Committees have been constituted by the Board to review its activities vis-à-vis to monitor the progress of implementation of the functions as laid down under Section 8 of the Rubber Act. These are Executive Committee, Research & Development Committee, Market Development Committee, Planting Committee, Statistics & Import/Export Committee, Labour Welfare Committee and Staff Affairs Committee.

Shri Ettumanoor V Radhakrishnan representing other interests in the Board who was holding the position of Vice-Chairman from 30.11.2002 to 21.8.2003 was re-elected as the Vice-Chairman on 31.10.2003 by the newly reconstituted Board for a period of one year.

Shri SM Desalpine IAS, continued as the Chairman of the Board during 2003-04.

ORGANISATIONAL SET UP

The activities of the Rubber Board are carried out through eight Departments viz. Rubber Production, Administration, Rubber Research, Processing & Product Development, Training & Technical Consultancy, Finance & Accounts, Statistics & Planning and Licensing & Excise Duty; headed respectively by the Rubber Production Commissioner, the Secretary, the Director of Research, the Director (P&PD), the Director (T&TC), the Director (Finance), the Jt. Director (S&P) and the Director (L&ED). During the year under report, as the post of Secretary was lying vacant, the Director (L&ED) continued to hold additional charge of the post of Secretary.

The Headquarters of the Board along with the Administration, Rubber Production, Statistics & Planning, Licensing & Excise Duty and Finance & Accounts Departments are located at own premises in Keezhukunnu, Kottayam-686 002.

The Departments of Research, Processing and Product Development and Training & Technical Consultancy are located at the Rubber Research Institute of India campus at Kottayam - 686 009.

There are nine Sub/Liaison Offices under the Licensing & Excise Duty Department. The Rubber Production Department has 4 Zonal Offices, 2 Nucleus Rubber Estate & Training Centres, 42 Regional Offices, 167 Field Stations, 13 Regional Nurseries including 2 District Development Centres, one Central Nursery and 19 Tappers' Training Schools located at different rubber growing regions.

The Research Department runs two Regional Research Stations in Kerala and a Regional Station each in Tamilnadu, Karnataka, Maharashtra, Orissa, West Bengal, Assam, Mizoram, Meghalaya and Tripura. Besides, the Research Dept. also runs Pilot Block Rubber Factory and the Pilot Plant for Radiation Vulcanisation of Natural Rubber latex located at Kottayam. The Pilot Latex Processing Factory located at the Central Experiment Station at Chethackal and the Model TSR Factory established under the World Bank Assisted Rubber Project are run by the Department of Processing and Product Development.

The Chairman exercises administrative control over all the Departments and Offices of the Board. The total number of Officers and staff under the Board as on 31.3.2004 was 2054 consisting of 315 Group 'A' Officers, 605 Group 'B' Officers, 940 Group 'C' staff and 194 Group 'D' staff. Very cordial relations existed between the staff and the executive personnel. Their good work has resulted in taking the Board to greater heights.

The activities of the different departments are summarized in the following pages.



PART III

RUBBER PRODUCTION

The Rubber Production Department is responsible for planning, formulation and implementation of schemes for promoting rubber cultivation, production of natural rubber, supporting primary processing and improving quality of the produce. The major programmes formulated and implemented during the year 2003-2004 are as follows.

1. Rubber Plantation Development Scheme.
2. Promotion of Rubber cultivation of rubber among scheduled caste/ scheduled tribe through Block planting, Group planting schemes.
3. Advisory and Extension services to growers for scientific planting and production.
4. Supply of plantation requisites for popularization of improving production and processing.
5. Schemes for primary processing and quality upgradation of small holders' produce.
6. Promotion of Group activities, self help groups among small rubber holders.
7. Training of rubber tappers and growers for income generation.

Board continued to implement various rubber development schemes separately for the traditional/non-traditional areas and North Eastern Region.

RUBBER PLANTATION DEVELOPMENT SCHEMES

Rubber Plantation Development Scheme in Traditional area/Non-Traditional area other than North East

The rubber plantation development scheme

provides for free technical support and financial assistance for new planting and replanting. The planting target for the year 2003-2004 was 5200 ha. against which the area planted was 4849 ha. The details of the target and performance under RPD Scheme during 2003-04 in traditional area/ non-traditional area other than NE, are as follows.

2003-04 planting

Category of planting	Target	No. of permits issued	Achievement in ha.
Replanting	4200	4547	3591
Newplanting	1000	2453	1258
Total	5200	7000	4849

In addition to this 2572 permits based on applications received in the previous year for planting in an area of 1588 ha. were also issued during the year.

Total amount of Rs.8,32,31,283/- has been paid as financial assistance in Traditional and Non Traditional area other than NE under RPD scheme during 2003-2004 including spill over payment.

Block plantation project for SC/ST

This project implemented jointly by the Board and the State Governments of Kerala, Tripura, Orissa, Andhra Pradesh and Karnataka adopting an integrated approach, aims at an overall development of Tribal/SC categories. The concerned State Governments are financially supporting the project. The state-wise progress achieved under the scheme is as follows:



State	Area brought under the scheme during 2003-04 (Area in ha.)	No. of beneficiaries during 2003-04	Cumulative total up to 2003-2004 (area in ha)	Cumulative No of beneficiaries upto 2003-04
Orissa	Nil	Nil	225	328
Andhra Pradesh	16	7	98	70
Karnataka	Nil	Nil	250	418
Kerala	Nil	Nil	2,063	5,971
Tripura	107	109	2,764	2,362
Total	123	116	5,399	9,149

Insurance of Rubber plantations

Rubber plantations are insured against natural calamities. All immature plantations raised under the Board's RPD scheme and mature plantations

on voluntary basis up to 22 years of age are given coverage. Immature plantations outside the RPD Scheme is optional to the growers. Details of plantation insured and compensation paid are given below.

Item	Cumulative Total up to 31/03/2003	Achievement from 01/4/2003 to 31/03/2004	Cumulative Total
Immature Area Insured (Ha)	95,954.97	4,891.54	1,00,846.51
No of Holdings	1,44,079	6,870	1,50,949
Mature Area Insured (Ha)	11,721.12	1,068.21	12,789.33
No of Holdings	6,148	456	6,604
Compensation paid (Rs. In lakhs)	227.61	47.39	275
No of Beneficiaries	6,131	798	6,929

Distribution of leguminous cover crop seeds

The scheme is formulated and implemented by the Extension wing, on a need basis for

providing Pueraria and mucuna seeds for establishing leguminous cover in the field. The physical and financial target and achievements of the scheme are given below:

Item	Stock as on 01/04/03	Quantity Purchased during 2003-04	Distribution from 1/04/2003 to 31/3/2004
	(Kg)	(Kg)	(Kg)
Leg Cover seeds (Pueraria) Distribution in Traditional Area	17.500	346.000	38.000
Leg Cover seeds (Mucuna) Distribution in Traditional Area	33.750	509.00	471.350



Planting Material Generation (Traditional area)

With the twin objective of generating quality planting material and regulating market price, the Board is producing and distributing quality planting materials in a limited extent and distributing at cost price. Price concession is offered to the small growers. The planting materials produced have been issued to the needy growers for raising source bush material or for raising plantations. The details are given below.

No of nurseries owned by the
Board - Traditional area - 7 Nos

Area of Nurseries
(Traditional area) - 43.36 Ha.

No of nurseries owned by
the Board (NE/NT) - 7 Nos

Area of Nurseries (NE/NT) - 22.81 Ha.

Item	Achievement
Production in Traditional Area 2003-04	
Green budded stumps	146136 Nos.
Brown budded stumps	693326 Nos.
Total	839462 Nos.

Tappers' Training School

Regular Tappers' Training School (TRADITIONAL AREA)

There are 14 regular Tappers' Training schools in the Traditional area run by the Board at different plantation centres, for imparting training to small growers and workers in tapping. During the period under report, training was imparted to 1387 persons including 218 persons belonging to SC/ST categories in 97 batches.

Short term Tappers' Training Schools (TRADITIONAL AREA)

Apart from the conventional Tappers' Training school, Board is conducting short term intensive training courses in various practical aspects of

scientific tapping. During the period under report, 6562 persons were given training in 420 batches under the scheme for which a sum of Rs.16.81 lakh was incurred.

Promotion of Rubber Producers' Societies (RPS)

For the effective transfer of technology and for empowerment of the smallholding sector which accounts for 89% of the production of NR, Board has adopted a group approach by promoting formation of voluntary organization of small farmers at village level namely, Rubber Producers Societies (RPSs).

RPSs are envisaged to function as the extension arm of the Board to facilitate meaningful devolution of extension functions to render effective service to the small growers. During the period, 11 new RPSs were formed making the cumulative total to 2159. Efforts are also being made to revitalize the defunct RPSs by participatory approach. 73 RPSs were rejuvenated during the period.

5323 Executive Committee meetings and 1581 General body meetings of RPSs were held during 2003-04 in which 28408 director board members of the RPSs and 45656 growers participated. 747 Training programmes were also conducted by the RPSs during the year and 12728 growers participated in such training programmes. Audio visual aids were used in 933 meetings and 28094 growers benefited.

Board has established 35 RPSs, 30 in traditional area and 5 in non traditional region, as model RPSs with infrastructure facilities required for functioning as centres for technology transfer and model primary processing centres. These model RPSs are functioning as Training centres for growers, workers etc. Training programmes were conducted on various subjects such as plantation management, quality sheet making, grading, beekeeping, manuring, plant protection, tapping, etc. These centres have been equipped



with audio visual facility for conducting training programmes. For the effective use of information technology for knowledge upgradation and sharing information, computers were also procured in major centres.

Scheme for granting financial assistance to RPSs to set up group processing centre, smoke house, training hall & effluent treatment plants

The scheme is aimed at supporting RPSs to set up crop collection centres and group processing facilities for a better raw material supply chain for quality upgradation of NR. An amount of Rs.5,31,78,631/- was disbursed to 191 RPSs during the year as assistance.

Women Empowerment Programme

A monitoring cell is functioning in the Central Office and nodal Officers at the Regional Office level, to provide logistic support to the women empowerment programmes (income generation as well as training activities) initiated by RPSs. The women self help groups under the RPSs were supported by the Board in the areas of training and for marketing of their products.

Farmer education programme

Interpersonal interaction

To disseminate technical knowhow to the farmers 1,74,379 numbers of field visits to the farmers fields were conducted by the Extension Officers of the Board during 2003-04 and necessary technical advice provided. During such field visits, demonstrations were also conducted by the Extension Officers on need basis.

Group interactions

Owing to the wide ratio of the extension officials and growers numbering almost about a million, the department has been promoting a group approach to maintain contact with the grower

community. Campaign programmes are also being conducted every year in order to popularize the modern techniques of rubber cultivation and processing. The topic highlighted during 2003-04 was "Group approach Aiming at Quality Improvement". The details of the meeting during the period are as shown below:-

Type of meeting	No: of meeting	No. of Participants
Full day seminar	80	6413
Half day meeting	864	29492
Group meeting	2767	36562
Campaign meeting	2753	68535
Training programme	808	13887
RPS Meeting	8445	73425
Use of Audio visual Equipments	951	28572
Other Meeting	4390	10581
Total	21058	267467

Sasthradarshan Programme

Under the programme 214 growers from non-traditional/north eastern states were brought in 18 batches from Tripura, Assam, Orissa, Andhra Pradesh & Goa to the traditional rubber growing areas in Kerala and given training on various aspects of Rubber cultivation as detailed below.

State	No. of Batches	No of Trainees
Tripura	7	81
Assam	6	68
Orissa	3	39
Goa	1	13
Andrapradesh	1	13
Total	18	214

Training Programme for Technical Officers

As part of Human Resource Development Programme of the Board, 15 Extension Officers were trained at Kerala Agriculture University on "Participatory learning for extension work", "Dynamics of group management" and "IT enabled services in extension".

**Computerization**

All the Regional Offices have started processing applications under Rubber Plantation Development Scheme in Computers.

RUBBER DEVELOPMENT SCHEME IN NORTH EASTERN REGION**Rubber Plantation Development Scheme**

Performance results under RPD Scheme in North East Region during 2003-04 are furnished below:

(a) 2003-04 planting

Category of planting	Target in ha.	No. of permits issued	Achievement in ha.
Replanting	30	1	33
Newplanting	2000	2255	1816
Total	2030	2256	1849

(b) Total number of permits issued during 2003-04 including spillover permits of previous years planting

Category of planting	No. of permits issued	Achievement in ha.
Replanting	1003	39.86
Newplanting	2338	1868.00
Total	3341	1907.86

Considering the excellent potential for rubber plantation development in the region, the department continued its activities for servicing

the existing plantations and also area expansion in NE Region. 109 tribals were selected for block planting with an area of 107 ha, during the year. The cumulative area and number of beneficiaries brought under block planting as at the end of March 2004 are 2760.28 ha. and 24471 respectively. Under the group planting scheme 298 persons participated in planting in an area of 287.65 ha. The total area so far planted under the group planting scheme as on 31/3/04 is 5240.66 ha. and the number of beneficiaries is 5596. In order to raise poly bagged plants for next year's planting, 11.17 lakh budded stumps and 8,01,784 polythene bags were distributed to 2641 and 2081 growers respectively.

Integrated village level rubber development

During the 10th plan an integrated approach for rubber based developments on a village basis has been adopted having two components namely;

- 1) Revitalization of the sick plantations established after 1997 and Restocking of poor plantations.
- 2) Expansion of the area adopting group approach, implementation of productivity enhancement measures for mature plantations and creating processing and marketing facilities on group basis.

The progress under the scheme during 2003-04 are as shown below:-

Component	GUWAHATI		AGARTALA		Total no of bene-ficiaries	Total Area (Ha)
	No of bene-ficiaries SC/ST	AREA (ha)	No of bene-ficiaries SC/ST	AREA (ha)		
REVITALISATION	49	27.36	58	24.08	107	51.44
RESTOCKING	63	60.93	72	39.63	135	100.56
TOTAL	112	88.29	130	63.71	242	152



Rs. 11,32,705 was paid as assistance under the Integrated village level Development scheme.

Demonstration of agromanagement practices

Rubber being a relatively new crop in the NE region, strong extension support is required to make the farmers adopt scientific agromanagement practices in their plantations. Board has already established Nucleus Rubber estate & Training Centers (NRETC) in Tripura and Andaman Nicobar Islands. In other North Eastern States, District Development Centres (DDC) have also been set up. A Rubber Research & Training Centre has also been started in Assam (RRTC). These centres had conducted farmers' training programmes, demonstration plantations, etc during 2003-2004.

Distribution of estate inputs

Board had distributed the following estate inputs during the year, in the NE Region.

Inputs item	No of Growers	Quantity
Urea	4310	208.65 MT
MOP		162.20 MT
MRP		475.20 MT
Budding tape	25	287KG
Aluminium Sieves	64	163 Nos
Total Growers	4399	

Distribution of Cover Crop Seeds

Item	Opening stock	Quantity procured during the year	Quantity Distributed
Cover crop seeds	2198.5 kg.	946.5 Kg	3145 Kg

The Nucleus Rubber Estate and Training Centre (NRETC) in Tripura state and District Development Centres (DDC) in the state of Assam (2) and Meghalaya (1) are maintained by the Department to cater to the needs of rubber growers. RRTC Agartala and DDC

Jengitchhakgre had imparted training to 831 growers on various subjects in 56 batches. 4 Exhibitions were conducted and 5350 growers visited the exhibition stalls. 111 RPSs/Rubber Growers Societies were formed with a total grower participation of 3980.

Farmer education programme in NE region

Inter personal interaction

Inter personal interaction being an effective extension tool to disseminate technical knowhow, the Extension Officers of the Board conducted 31,681 numbers of field visits during 2003-04 and necessary technical advice provided to the growers. During such field visits, demonstrations were also conducted by the Extension Officers on need basis.

Group interactions

Campaign programmes are being conducted every year in order to popularize the modern techniques with regard to rubber cultivation and processing. The details of the meeting conducted during the year are as given below:

Type of Meetings	No. of meetings	No. of Participants
Half day seminar	2	92
Group meeting	497	10438
Exhibition	4	5350
Campaign	88	2755

Tappers' Training School in NE area -Regular course (School -3)

Regular training was imparted to 251 persons including 139 persons belonging to SC/ST categories in 17 batches for whom stipends were paid. A sum of Rs.2,01,885/- was incurred under this head.

Short Duration Intensive Tappers' Training programme in NE/ NT Area.

Short duration intensive tappers' training was imparted to 1,345 persons in 90 batches at an expenditure of Rs.3,72,080/-.



Women Empowerment Programmes

During 2003-04 Board conducted following programmes exclusively for women in the North East.

Details of the programmes	No. of batches	No. of participants
Tappers Training	5	75
Crop Processing	5	75
Health Camp	10	1303
Apiculture Training	3	5

Scheme for Boundary Protection

Under the scheme financial assistance is given to small growers to erect fencing to protect their young plantations from cattle menace. The details of assistance extended during 2003-04 are given below:

a) Assistance for Bamboo Fencing

State	Category	Number of beneficiaries	Area (ha)	Total amount paid (in Rs)
Tripura & Assam	SC	57	22.60	42503
	ST	1360	1192.28	1903642
	General	296	228.10	237297
	TOTAL	1713	1442.98	21,83,442

b) Assistance for Barbed Wire, Fencing

State	Category	Number of beneficiaries	Area (ha)	Total amount paid (in Rs)
Assam	SC	1	3.19	5583
	ST	6	3.47	10172
	General	1	3.35	3350
	Total	8	10.01	19,105

Other Assistances

Other schemes like assistance for irrigation, beekeeping, group processing and free supply of rubber rollers were implemented during the year as per details given below:

Sl. No.	State	Type of assistance	No. of units	Total amount paid (in Rs.)
1	Assam	Irrigation	1.39 ha	6,950
2	Assam	Free supply of rubber rollers	16 Nos.	
3	Tripura	Bee-keeping	1 set	8,000
4	Tripura	Group processing RPS Block Planting	10 9	48,69,300 44,60,897
5	Tripura	Supply of Generator to RPS	1	30,000

Quality Planting material Generation (NE)

During the year, 3.92 lakh Nos. budded stumps were produced in the nurseries, maintained by the Board in the NE Region.

Non-Traditional area other than NE Region

The Department continued its activities for servicing existing plantations and area expansion in the States of Karnataka, Maharashtra, Goa, Orissa, Andhra Pradesh, and West Bengal. Apart from the Rubber Plantation Development scheme and other extension support scheme, block plantation projects aimed at economic settlement of tribal growers were also under implementation in these regions.

Price Stabilization Fund

The objective of PSF is to provide support to small growers when price falls 20% below the price band that would be announced every year.

Under the scheme, 16,240 growers were enrolled during 2003-04 under the scheme.



PART IV

ADMINISTRATION

The Administration Dept. consists of the following Sections and Divisions.

Establishment Section
(General Administration, Personnel Administration & Entitlement)

Marketing Division
Labour Welfare Section
Legal Section
Hindi Section

ESTABLISHMENT SECTION

General Administration

The important functions of the General Administration are constitution/reconstitution of the Board and its Sub Committees, convening the meetings of the Board and its Committees, monitoring implementation of the decisions of the Board, managing the house keeping activities etc.

Meetings of the Board and its Committees

The following meetings of the Board and of the Committees were held during the year.

Board meetings

147th meeting - 29.05.2003
148th meeting - 19.07.2003
149th meeting - 31.10.2003
150th meeting - 29.03.2004

Committee meetings

* Staff Affairs Committee	23.05.2003
* Executive Committee	16.08.2003
* Market Development Committee	24.01.2004
* Planting Committee	26.03.2004
* Labour Welfare Committee	26.03.2004

Entitlement

Sanction of interest bearing advances

Financial assistance to the tune of Rs.79,62,500/- was disbursed to 31 employees of the Board as House Building advance during the year 2003-04. A sum of Rs.22,28,650/- was disbursed towards other advances to 78 employees as per details given below.

Sl. No	Type of advance	No. of employees	Amount disbursed in Rs.
1	Car Advance	4	5,46,000/-
2	Motor Cycle/ Scooter Advance	34	9,37,150/-
3	Cycle Advance	23	34,500/-
4	Computer Advance	17	7,11,000/-
	Total	78	22,28,650/-

On completion of recovery/refund of House Building Advances along with interest, re-conveyance deed were executed in 22 cases.

Maintenance of Service Books and Personal Files

18 Service Books and Personal files were opened during the year and these are maintained properly along with other Service Books.

Retirement and grant of retirement benefits

42 employees of the Board retired on superannuation and 3 retired voluntarily from the service of the Board during the year. All retirement benefits such as pension, gratuity, commutation of pension, encashment of leave etc. were granted/paid in time. Family pensions were granted to families of 7 officials who died in harness.

**Personnel Administration**

18 persons were newly recruited during the year to Board's service. There were properly constituted Selection Committees/DPCs for selection of personnel befitting job requirements. Periodical returns on the personnel recruited/promoted at reservation points were sent to the Government.

223 employees/officers were promoted/higher grade awarded during the year with the following split up.

Regular promotions	: 143
Higher grade awarded under ACP Scheme	: 48
Upgradation of posts	: 25
Revision of scale of pay	: 4
Higher grade awarded under Career improvement	: 3

I The total number of Officers and staff under the Board as on 31.3.2004 was 2054 as detailed below.

Sl. No	Name of Department	Group A	Group B	Group C	Group D	TOTAL
1	Rubber Production	180	382	498	105	1165
2	Research	61	134	190	55	440
3	Licensing & Excise Duty	23	29	82	6	140
4	Administration	14	14	56	17	101
5	Processing & Product Dev.	17	18	40	3	78
6	Finance & Accounts	6	14	34	2	56
7	Training & Technical Consultancy	9	8	28	4	49
8	Statistics & Planning	5	6	12	2	25
	TOTAL	315	605	940	194	2054

II Groupwise details of Female Employees and their percentages to that of total staff strength as on 31.3.2004.

Group	No. of female employees	Total staff strength	% of Total
A	68	315	21.59
B	231	605	38.18
C	394	940	41.91
D	24	194	12.37
Grand Total	717	2054	34.91

MARKETING DIVISION

The Division continued collection, compilation and dissemination of natural rubber prices during the year. The daily prices of the predominantly traded forms of NR, ie. RSS-4 and RSS-5 grades of sheet rubber at Kottayam and Kochi were collected, compiled and reported to the news agencies and press for publication and other

agencies including the Ministry of Commerce, Industry, Govt. of India. The prices of other grade of rubber were also published on daily/weekly/basis. The domestic and international prices of various grades of rubber were also loaded in the website of the Rubber Board on daily basis.

LABOUR WELFARE SECTION

As per clause (f) of sub section 2 of section of the Rubber Act 1947 Board is to "secure better working conditions and the provisions for improvement of amenities and incentives for rubber plantation workers".

With a view to generating interest among tappers/workers of rubber plantation industry who are indispensable for the development and promotion of rubber cultivation, Board has implemented several schemes for the welfare of the tappers/workers and their family members.



A sum of Rs.200.8 lakh was disbursed under the various schemes against the target of Rs.201 lakh, as per details furnished below:-

Educational stipend scheme

The Scheme provides for financial assistance for different courses of studies including professional courses undergone by children of rubber plantation workers both in the colleges and schools.

The stipend consists of (1) Lump sum grant and (2) Hostel/Boarding fee

Merit Award Scheme

The scheme is provided to the children of the rubber tappers/workers who pass out meritoriously. The Merit Award ranges from Rs.1000/- to Rs.5000/- for various courses. This is given as an incentive to encourage good performance in their studies.

Housing Subsidy Scheme

The scheme provides for financial assistance to the tappers in small holdings as well as large estates to attain one of the basic minimum necessities of life i.e., shelter. The workers in the large estates are also eligible for the assistance. Under the scheme the maximum amount payable is Rs.7500/- or 25% of estimated cost of construction of the house whichever is less. In North-Eastern Region, houses built with mud walls, split bamboo walls and grass/leaves would be eligible for a maximum subsidy of Rs.6000/-. For the houses with split bamboo walls and G I Sheet roof, the maximum subsidy would be Rs.7500/-.

Scheme for providing sanitary facilities

The purpose of the scheme is to maintain hygienic environment among the rubber tappers of unorganized sector. Under the scheme the Board assists the tappers to construct latrine as per the plan and estimate prescribed by the Board.

The maximum financial assistance payable under the scheme is 75% of the cost of construction or Rs.3000/- whichever is less.

Medical Attendance Scheme

This scheme is introduced for tappers in the unorganized sector of rubber holdings. It provides reimbursement of medical expenses incurred for treatment of the tappers suffering from illness, and also compensation to the tappers in lieu of their inability to attend duty in consequence of illness.

As an encouragement for the promotion of small family norms among the tappers working in the rubber small holding sector a lumpsum amount is given under the scheme to the tappers who have undergone sterilization operation.

Housing and sanitary subsidy scheme for SC/ST/OBC

This scheme is exclusively for SC/ST/OBC tappers who are employed in rubber holdings in the unorganized sector. Assistance under the scheme is granted for construction of house with latrine to the extent of Rs.14, 000/- per applicant.

Group Insurance cum Deposit scheme

This is an important social security measure introduced for the security of the workers against death and injuries caused by accidents. It is applicable to plantation workers who are not covered by the Plantation Labour Act 1951.

The scheme also encourages a habit of saving among the workers. The first phase started during the financial year 1986-87 has reached the XI phase in 2000-2001.

Each of these yearly schemes is individual schemes and will be in operation for a period of ten years. The workers enrolled in the scheme have to renew the policy every year by remitting the prescribed amount. Phase I to V were completed and 6 phases had to be renewed during 2003-04. An amount of Rs.28,38,407/- under Phase IV which was matured during the period was disbursed to 1,081 tappers.



A new Contributory Group Insurance Scheme was commenced during 2001-02 which provides for insurance coverage for an amount of Rs.50,000/- exclusively for tappers in the small holdings. This scheme provides for higher compensation against accidents and promotes the habit of saving among the tappers. Under the scheme, the beneficiary contribution is Rs.250/- and that of Board Rs.150/- per year.

Performance report of all the schemes for the year 2003-04 is shown below.

Name of scheme	Total no. of beneficiaries	Total Amount disbursed (Rs)
Educational stipend	8121	4591030
Educational Merit Award	165	214250
Medical Attendance	451	787091
Housing Subsidy	796	5968750
Housing / Sanitary for SC/ST	555	4020375
Sanitary Subsidy	660	1979625
Insurance cum Deposit Scheme	9541	1168950
Operating Expenses		1350000
Total	20289	20080071

LEGAL SECTION

Legal documents to be executed by Board during the year under report were drafted/ prepared as and when required. Appropriate steps were taken through lawyers to safeguard the interest of the Board. 14 new cases were filed in addition to the pending cases. Besides, steps were taken to conduct arbitration cases filed against the Board. Parawise comments and necessary instructions were given to Standing Counsels of the Board and the Central Government pleaders in cases pending in High Court and Supreme Court. In consumer disputes before Redressal Forum in various districts, the section prepared and filed replies and represented

the Board during the hearing. Necessary advice/ views were given in 699 files referred to the Legal Section during the year. Scrutiny of documents for determining the eligibility under the Rules was done in the case of 35 applications for House Building Advances.

Necessary assistance was given to RRS Dhenkanal, RRDS Andamans, Central Experiment Station, Chethackal, RRII Farm, HBSS Nettana and Paraliar, Nurseries/farms of RP Dept. etc. in dealing with labour matters. The Section prepared draft amendments proposed by the Board to Rubber Act/ Rubber Rules

HINDI SECTION

The Rubber Board is a notified office under Rule 10(4) of Official Language Rules.

The following activities were undertaken by the Hindi Section of the Rubber Board during the Reporting year.

Official Language Implementation Committee

Three meetings of the Official Language Implementation Committee of the Board were held during the year. The Agenda Notes were prepared in accordance with the instructions of the Department of Official Language. Quarterly Progress Reports on Official Language implementation were presented in the meetings and were discussed.

Hindi Advisory Committee Meeting

The Chairman, Rubber Board and the Asst. Director (OL) attended the Hindi Advisory Committee Meeting of the Department of Commerce, held at Udyog Bhavan on 1st September 2003, presided over by the Union Minister of Commerce and Industry.

Hindi Fortnight/Hindi Day Celebration

Hindi fortnight was celebrated from 15th September 2003 to 26th September 2003 in the Head Quarters and RRII and Hindi day was celebrated in 30 subordinate offices of the Board.



Various competitions were conducted for the officers/employees of the Board and a good number of officers/employees participated in these competitions.

Publication of Rubber Samachar Bi-monthly Bulletin in Hindi

Issues of bi-monthly Hindi bulletin "Rubber Samachar" were brought out during the year. Write-ups of officers/employees/their family members and many other useful items were featured in these issues.

Hindi Teaching Scheme

As per the policy of the Union, Hindi Teaching in 'C' region is to be completed by the year 2005. As such Hindi Typewriting classes were conducted at Head Office and RR11 of the Board since no centre of Hindi Teaching Scheme (Typewriting) is functioning at Kottayam. 11 Officials attended Typewriting classes. 22 officials passed Pragma examination during the year and 15 officials passed Prabodh examination of the Hindi Teaching Scheme during the year. 6 officials passed Typewriting examination during the year. Cash award and personal pay were given to those officials who passed the examinations.

Hindi Workshop

During the year, Hindi Workshops were conducted in 26 Subordinate Offices of the Board. A total of 457 officers/employees were imparted training in Official Language through these workshops.

Town Official Language Implementation Committee

Chairman, Rubber Board continued to be the Chairman of the Kottayam Town Official Language Implementation Committee (TOLIC). One meeting each of the TOLIC and TOLIC Core Committee was conducted during the year. One day Joint Hindi Workshop and Joint Hindi Week Celebrations were conducted during the year for the officials of the member organisations of the TOLIC.

Hindi Library

A small Hindi Library is functioning under the Hindi Section of the Board.

Necessary guidelines were provided to officers regarding implementation of Official Language Policy of the Union of India.

Quarterly Progress Reports regarding progressive use of official language collected from various sections/divisions at HQs were compiled and forwarded to the Ministry of Commerce & Industry and Regional Implementation Office.

OLICs in Subordinate Offices

Official Language Implementation Committees were formed in various Subordinate Offices of the Board during the year. Meetings of these committees were ensured.

Aaj Ka Sabda

Board continued writing Aaj Ka Sabda at Head Office and ensured the same at subordinate offices too. Necessary guidance was provided to Subordinate Offices for writing Aaj Ka Sabda.

Incentive Scheme for Original work in Hindi

More officials were encouraged to do original noting in Hindi. Necessary guidance was provided to them for writing files in Hindi. 244 officials participated in the incentive scheme and were given cash awards under the scheme.

Official Language Inspection

Official Language inspections were conducted in 13 subordinate offices of the Board during the year.

General

In compliance with the provisions under Section 3(3) of the OL Act, Office Memoranda, Circulars and Orders were translated into Hindi. Similarly, translation of forms into Hindi and printing of forms in bilingual were undertaken. Special attention was given to send replies in Hindi.



to the letters received in Hindi. Necessary guidelines were provided for Hindi Implementation to the concerned as and when required.

The text material for Rubber Act and Rules in Hindi were provided for incorporation in the website of the Rubber Board.

Annual Report and Annual Accounts of the Board were translated into Hindi and necessary assistance was rendered for its bilingual publication.

DIVISIONS FUNCTIONING UNDER THE DIRECT CONTROL OF CHAIRMAN

PUBLICITY AND PUBLIC RELATIONS DIVISION

The following activities were conducted by the P&PR Division.

Rubber Magazine

12 issues of the magazine were brought out during the year. The monthly average circulation is 15,954. The life subscribers is 6,300.

Rubber Statistical News

12 issues of the 'Rubber Statistical News' were brought out during the year.

Inside Rubber Board

2 issues of 'Inside Rubber Board', an in house publication were brought out.

All India Radio

Talks of the officers of the Division were recorded and broadcast through the AIR. One talk each was given by Sri. K.D. Sebastian, PIO, Sri. K.G. Sathesh Kumar, PIO and Asst. Director (P) through AIR, Thiruvananthapuram. The Asst. Director (P) also worked as a member in the Committee which organised and arranged for the recording and broadcast of a 13 episode series on AIR on rubber.

Seminar & Meetings

The officers of the Division participated and

spoke in several seminars, meetings and other public functions connected with the activities of the Board.

Exhibition

The Division participated in eleven exhibitions viz.

- i. UPASI exhibition at Coonoor
- ii. Karshikamela at Thodupuzha
- iii. Exhibition at Baselius College, Kottayam
- iv. Index at Kottayam
- v. "Agri Fest" Exhibition, Kannur
- vi. Karshakasree Karshika mela, Palghat
- vii. Karshika vyaparamela, Palode
- viii. North Eastern business summit, New Delhi
- ix. NE Trade Expo '04, New Delhi
- x. Rubber Tech Expo'04, Mysore
- xi. Industrial India Trade Fair, Kolkotta.

Articles

The Division published articles in various publications, Besides 83 advertisements and 35 press releases were also issued from the Division.

Rubber Grower's Companion 2004

9500 Copies of "Rubber Grower's Companion 2004" and 1000 Nos. of "Rubber and its Cultivation" were printed and distributed.

VIGILANCE DIVISION

During the year under report, the Vigilance Division of the Board investigated into/verified 32 complaints against 17 officers of Group A & B status and 15 officials of Group C & D status. The allegations comprised in these complaints generally related to acceptance of illegal gratification from the representative of a grower for granting subsidy to the planter, failure to protect the interests of the Board by allowing construction



of a Latex Collection/Group Processing Centre of an RPS in a plot of land outside the leased property causing pecuniary loss to the tune of Rs.4,08,000/- to the Board and corresponding gain to the RPS President, gross misuse of official position for personal gains, disorderly behaviour/unbecoming conduct while discharging duties, desertion of duty place and negligence causing heavy damages to Board's properties, neglect of official duties by continuously staying abroad/unauthorisedly absenting from duties, in defiance of the directions/orders of the Board etc. After proper investigations, appropriate action was recommended / taken against the erring Board's employees wherever found necessary.

16 major and 3 minor penalty proceedings were instituted against 19 officials of the Board

Annual statements of immovable property as on 31.12.2003 were called for from all officers of

Group A & B status. The statements thus received were properly dealt with. The Vigilance Division processed 131 applications relating to transactions in immovable property and 89 applications in movable property.

As per instructions received from the Central Vigilance Commission, the Board observed the "Vigilance Awareness Week" during the period from 3.11.2003 to 8.11.2003. The salient feature of the programme included taking a pledge by all officers and staff of the Board, exhibiting posters and banners, conducting elocution competition for college students, High school/Higher Secondary school students and employees of the Board. On the concluding day of the celebration, a valedictory function was also organized in which the successful students/employees were awarded certificates and prizes.



PART V

RUBBER RESEARCH

The Rubber Research Institute of India (RRII) was established in 1955 with its headquarters at Kottayam. The main research farm of the institute is located in an area of 250 ha. at Chethackal, Ranni in Pathanamthitta district. It has 9 Regional Research Stations spread across the country in the states of Kerala, Tamil Nadu, Karnataka, Maharashtra, Orissa, West Bengal, Assam, Meghalaya and Tripura. Four Regional Research Stations in the North East form the North Eastern Research complex with its headquarters at Agartala. The institute conducts research and development work in the fields of plant breeding, germplasm conservation, biotechnology, exploitation technology, agronomy and soil science, plant pathology, plant physiology, economics and rubber technology. It has 120 scientists and 320 supporting staff. The activities of the Institute are briefly narrated below:

The **Botany** division continued research activities for the development of high yielding clones. Investigations on propagation, anatomy, cytogenetics were also continued. The 400 series clones developed by RRII (RRII 414, RRII 417, RRII 422, RRII 429 and RRII 430) continued to show higher yield over the most popular high yielding clone, RRII 105. In the large scale trial, yield improvement was 10-28%. In the multi location trial, incorporating these clones, at Kanyakumari, Agartala and Nagrakatta, the experimental trees were opened for tapping. In these trials, the highest growth was observed in clone RRII 429. Clone RRII 414, RRII 417, RRII 422 and RRII 430 were upgraded to category II of the planting material recommendations of the Board. In the Regional Research Station at Dapchari in Maharashtra, maximum yield performance was shown by clones RRII 6, RRII 208 and RRII 105. In a lab study, pollen grains

of trees affected with tapping panel dryness (TPD) showed higher sterility percentage. In connection with timber studies, clone RRII 203 showed maximum bole volume compared to the other clones studied. The study also showed that continuous application of ethephon has no adverse effect on the quality/quantity of rubber wood.

Conservation, characterization and evaluation of germplasm of both 'Wickham' as well as wild origin were continued in **Germplasm** Division. 600 wild accessions and 4 controls were planted as source bush nurseries. A clone trial was laid out with 22 wild accessions selected for yield and other characters. Eight new clones were included in the clone museum. Among the IRCA clones, IRCA 130 and 111 had better girth, bole volume and yield than clone RRII 105. In the preliminary evaluation trials, two accessions of wild germplasm showed better yield than clone RRII 105, while 14 accessions had comparable yield to that of the control clone. Wintering and flowering were recorded in 1989 source bush nurseries. Characterization of accessions was done in the trials at RRS, Padiyoor and RES, Nagrakatta. The project on timber quality was continued. At RRS, Dapchari, 130 wild accessions were planted for drought screening. The cold screening studies at RES, Nagrakatta was continued. Field screening of wild accessions for drought resistance was carried out at CES, Chethackal in collaboration with Plant Physiology Division. Screening of wild genotypes for major diseases including field observations was continued. Total of 35 accessions were short listed for resistance to powdery mildew disease. In the study on ratooning, growth of ratoons was found to be three times faster than that of poly bag plants.



In **Biotechnology** Division, studies on somatic embryogenesis were continued. Further optimization for nutritional and growth regulator requirements to enhance embryo induction and plant regeneration, was carried out. One more field trial with tissue culture plants of clone RRII 105 developed through somatic embryogenesis was laid out at CES, Chethackal. Attempts were also initiated to develop tissue culture plants from leaf and ovule culture. For developing haploid and triploid plants, the pollen grains and endosperm tissues were cultured. Over expression of superoxide dismutase enzyme was confirmed in the transgenic plants. All the transgenic plants were multiplied through bud grafting. Beta-1, 3-glucanase gene involved in disease tolerance was cloned and structural elucidation was done. Partial latex cDNA libraries were developed for Hevea. Advanced molecular studies were continued.

In the field of **Exploitation technology**, experiments on low frequency tapping were continued. New experiments on low frequency tapping with rain guarding was laid out in Kulasekharam region. One year data showed success of weekly tapping in Kulasekharam region, provided rain guarding is done. A new 30 ha. experiment was laid out in Karnataka on weekly tapping in clone GT1. Under the lab to land programme, Low Frequency Tapping (LFT) was extended to a number of estates covering more than 20,000 ha. Three estates have completely shifted to weekly tapping. Three experiments were laid out on low frequency Controlled Upward Tapping under d/4 and d/6 frequencies.

In **Latex Diagnosis Unit**, tests were conducted in 206 small holdings. The parameters were estimated for RRII400 series clones also. Field experiment on latex diagnosis was laid out at Cheruvally Estate in clone PB 260.

Agronomy/Soils division continued research on agromanagement techniques involving

intercropping and cropping system, water conservation, weed management, nutrient management etc. There were 53 experiments under 14 major research projects. One experiment showed application of higher doses of nitrogen and potassium resulted in higher growth and yield. Results of field experiments on silt pit showed that 250 pits per ha. is optimum. In another study, it was observed that application of organic manure did not produce any beneficial effect in growth of immature plants.

The **DRIS Unit** has investigated nutritional aspects of rubber, soil fertility and soil water functions related to slope. Advisory service to small holdings was continued. A total of 8914 soil and 1420 leaf samples were analysed and 4600 fertilizer recommendations issued to small holders. In the estate sector, similar recommendations were issued to 553 fields. In addition to soil and leaf analysis, 39,311 latex samples were analysed for dry rubber content (DRC) and 257 samples for volatile fatty acids. During the year, 53 mobile soil testing programmes were conducted for offering fertilizer recommendations to small holders.

Plant Pathology division continued research on control of disease and pests, disease weather relationship, effluent management, soil microbiology and molecular Plant Pathology. The spray oil developed by M/s Hindustan Petroleum Corporation was approved for commercial use in rubber. In the high volume spraying trial, addition of rubber seed oil to Bordeaux mixture was found to give better disease control. The trials on evaluation of crop loss due to abnormal leaf fall disease in the popular clones was concluded. The data showed heavy crop loss in clone RRIM 600. It was also found that timber yield was more in the fields sprayed for the disease control. New field experiment to evaluate the effect of abnormal leaf fall disease in the RRII 400 series clones, has been initiated. Biological control of bark feeding caterpillar using fungus was found to be not very effective. For the control of the borer



beetles, combination of carbaryl 0.5% with lambda cyhalothrin 0.05% was found to be effective. Molecular study showed that abnormal leaf fall disease is caused by phytophthora maedii only. Molecular studies on corynespora was also continued. Studies on Tapping Panel Dryness transmission were undertaken.

Fluorescent rhizobacteria were isolated from the rhizosphere of rubber and screened for phosphate solubilisation, antagonism to major pathogen and ability for production of siderophores. Several useful isolates could be identified. Isolation of rhizobia from root modules of Mucuna and evaluation of nitrogenase activity were carried out.

Data on tapping days, yield and weather were calculated from each region to study the relationship of rainfall and yield.

Work on various aspects of growth, development, and stress physiology Tapping Panel Dryness etc. were continued by Plant Physiology group. The salient findings during the period were high ATP content in the latex as an indicator for predicting high yield, high ethylene production in Tapping Panel Dryness affected trees, higher genetic distance of trees between high girth and low girth categories than trees within the category in the germplasm material. Field enumeration was done in 600 germplasm lines for leaf yellowing, drying and senescence induced by soil moisture stress. Ten HP clones selected from RRS Dapchhari were screened for oxidative stress tolerance and the clones were ranked. Studies were initiated to introduce Pathimugham (Caesalpinea saban), a medicinal shrub during the immature phase and Mahogany (Swietenia mahogany) and Anjili (Artocarpus hirsutae), both shade tolerant as timber trees during the mature phase. The Division took part in the meetings of the IRRDB for taking up the issue of carbon sequestration by rubber plantations with the 9th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC-1991).

In the **Genome Analysis** laboratory, work was continued on development of molecular markers for genetic relationship studies, clone identification, genome mapping and genetic markers for biotic and abiotic stress tolerance and molecular genotyping of fungal pathogens of rubber. Sequencing of the selected Hevea genomic clones revealed the presence of 59 microsatellites having characteristic simple and compound repeats. Out of 4×10^9 bp, estimated to be the haploid genome size of Hevea, sequencing was done approximately 48×10^3 bp based on an average insert size of 650 bp per clone and identified various repeat motifs. Twenty nine new genomic sequences were registered with the NCBI genBank, USA. Resistant gene analogues (RGAs), an alternative approach to identify disease resistance gene in Hevea, is in progress. Molecular studies were continued to identify different species of Colletotrichum. Two markers (SCAR) were registered with genBank.

The **Rubber Technology** Division continued the survey on quality of sheet rubber produced at different rubber growing regions. Six samples of papain were evaluated on lab scale and found to be effective in deproteinization of NR latex. Specific treatment of skim latex resulted in skim rubber of enhanced physical properties and ageing characteristics. Trials were continued to improve its PRI. Fifty kgs. of ENR 50 was prepared and supplied for industrial evaluation and found to be satisfactory. Good quality sheet rubber, ISNR 3L and 3 CV could be prepared using field latex preserved with a short term preservation system. Studies on preservation of field coagulum, NR/PP and NR/PE blends, ENR as a reinforcement modifier for different rubbers, nanoclay reinforcement of NR and accelerated quality evaluation tests on centrifuged latex were continued. The latex and raw rubber properties of RRII 400 series clones were evaluated in comparison with those of the parent clones, RRII 105 and RRIC 100. Storage behaviour of prevulcanised latex and deproteinised latex were



assessed. A sponsored project on flame resistant conveyor belt cover compound was initiated. Studies on blends of NR/PVC showed that addition of NR-g-PMMA improved their vulcanizates properties.

The technology for the production of rubber coated conveyor belt and brake cups was transferred to M/s S.V.G. Acharya, Andhra Pradesh and M/s Perumaly Rubber Industries, Kottayam respectively.

The **Economics** Division continued studies on Global Trade and Tariff Policy of rubber and rubber products, expansion of natural rubber cultivation in Kerala, development of Latex Timber Plantations in Malaysia, Natural Rubber Trade in India, sustainability of bee-keeping under rubber plantations in India and trends in the adoption of low intensity tapping systems in the estate sector. The Division brought out a number of publications on various aspects.

At **Hevea Breeding Station** in D.K. District of Karnataka, evaluation of clones and ortet selections for growth, yield and disease tolerance were continued. Exploitation trial on different clones was also continued during the period. In the 1987 trial, clone PB 235 registered the highest yield, while clone RR11 300 showed very low yield. In the 1988 trial, clone RR11 208 showed better growth and yield. Clone RR11 105 showed good performance under low frequency tapping. In the large scale trial, clones PB 235, RR11 118 and RR11 203 showed good growth performance while in a small scale trial, clones PB 260, RR1C 100 and RR11 308 also showed relatively better performance. Among the modern hybrid clone of RR11 400 series, clone RR11 422 showed better establishment. Clone RR11 414 showed better vigour followed by RR11 429 and RR11 430. Clone RR11 105, PR 255, PR 261 and PB 28/59 were found to be more susceptible to the disease. Resistance was shown by clone RR11M 600 and GT 1. The disease could be effectively controlled by fungicide application. In another study, it was

observed that abnormal leaf fall disease incidence was more during June-July and Clone RR1M 600, PB 235 and PB 311 were more susceptible to this.

Various research programmes of **Hevea Breeding Sub Station at Kanyakumari** District also progressed well during the period. Pollination was carried out to evolve latex timber clones and clones with Oidium tolerance. One block each of 400 series clones were planted for onfarm evaluation. Standardization of root trainer planting technique for Hevea was continued.

All the 10 ongoing research projects in the **Regional Research Station, Dapchari** (Maharashtra) progressed well during the period. In the irrigation experiments, trees with basin irrigation system recorded comparatively high girth and yield than those getting drip irrigation. The cumulative yield per tree after 14 years of planting was the highest under 1.00 ETC basin irrigation. Experiment on drought stress and shade studies indicated that soil moisture deficit inhibited photosynthetic rates more in RR11 105 than RR1M 600. Partial shade favoured the plants to maintain better photosynthesis under water deficit conditions. Low frequency tapping experiment with stimulation and rest period, clone evaluation trial, polyclone evaluation trial and screening of wild Hevea germplasm for drought tolerance were in progress.

All the 8 ongoing research projects in the **Regional Research Station, Orissa** progressed well during this period. In the 1987 clone trial, clone GT1 and RR1M 600 recorded higher yield over RR11 105. In the 1990 clone trial, maximum girth was shown by clone SCATC 93/114 and RR11 208. Yield performance was better in clone SCATC 88/13, RR11 208 and RR1M 600. Low yield was recorded in SCATC 93/114. In the 1991 clone trial, clone GT1 recorded maximum girth. This was followed by clone RR1C 102 and RR11 208. In the 1996 clone trial, clone RR11 430 indicated better girth followed by RR11 417. Less girth was recorded by RR11 414. Eleven promising



polyclonal trees were identified for further selection and evaluation. The highest girth was recorded in Tree No. 471 (104.4 cm) followed by tree No.482 (103.1cm). Maximum yield was recorded in tree No.220 (79.4g/t/t) followed by tree No.234 (78.3 g/t/t). Fertilizer trial in the station showed the highest girth in treatment with NPK at the rate of 60:60:24 kg./ha.

All the 10 ongoing research projects of **Regional Research Station, Padiyoor** in North Kerala, progressed well during the period. Irrigation experiments being conducted in the station showed positive response to irrigation in girthing. In the clone trial conducted at Ambalavayal on (High elevation) Ortet selections Irtty 1, Panamaram 1 and Panamaram 270 and clone PB 86 attained higher girth than clone RR11 105.

At **Regional Research Station, Agartala**, 24 research projects were in progress during the period. In the fertilizer trial, it was observed that application of nitrogen and phosphorus at the rate of 60:60 kg./ha. resulted in significant increase in yield. Growth in the immature phase was higher when the manure was applied @ 20kg./plant. The clone RR11 208 showed higher yield in the station. The other clones which showed higher yield are RR11 118, PB 86 and RR11 600. In the tea intercropping experiment, yield of green tea was 2183 kg./ha.

Fifteen ongoing research projects in the research complex for North-Eastern region, **Guwahati** progressed well during this period. Results of the experiments showed superiority of the clone RR11 600 both in growth and yield. Fertilizer trial showed maximum yield response by application of NPK @ 60:40:40 kg./ha./yr. Application of superphosphate @ 60 kg./ha. registered the highest growth in the immature phase. Yield and dry rubber content were the highest under fourth daily tapping with 7

stimulations and 3 month rest during winter season. Survey on pests and disease of rubber was carried out in 58 locations covering 26 different rubber growing tracts in Assam, Meghalaya, Tripura and Northern part of West Bengal. Powdery mildew disease was noticed in most of the locations with varying degrees of severity. Tolerance to the disease was shown by clones SCATC 88/13, SCATC 93/114, PB 86, RR1C 100, 82/29, RR11 208, RR11 203, RR11 703 and Haiken 1.

At the **Regional Experiment Station at Nagrakatta**, 13 ongoing experiments progressed well during this period. Performance of Chinese clones SCATC 93/114 was superior in growth and yield. Growth of rubber was better when planted with Tea. Third daily tapping was found more suitable for the region.

Clone trials at **RRS, Tura**, Meghalaya showed superior growth of clones RR11 600, RR11 203 and PB 235. Yield performance was better for clones RR11 600 and PB 311. Fertilizer dose of NPK 40:20:20kg./ha. was found suitable for immature rubber in Lower Brahmaputra Valley while for Garo Hills dose 60:40:40 kg./ha. was found optimum. Study on leaf nutrient contents in different clones was initiated during the period.

The Director (Research) Joint Director (Exploitation) and Dy. Director (Plant Physiology) participated in the International Rubber Research and Development Board (IRRDB) symposium held at Chiang Mai during 13-19 Sept. 2003. They also attended the combined meeting of IRRDB members and IRRDB Liaison Officers' meeting. Four research papers covering fields of Rubber Technology, Exploitation Technology and Carbon Sequestration were presented.

The Rubber Research Institute of India conducted a four day International Workshop on Exploitation Technology. 43 delegates



participated in the workshop including fifteen delegates from 9 rubber growing countries and eighteen planters from India. The workshop was jointly sponsored by IRRDB and its members, Rubber Board and Planters.

Ten scientists were sent abroad in various

institutions for advanced training in different research disciplines. During the year, 116 research papers were published by the scientists and 21 popular articles were published. 18 internal scientific seminars were organized in which 32 presentations were made and seven invited talks were also arranged.



PART VI

PROCESSING AND PRODUCT DEVELOPMENT

The Department of Processing and Product Development continued to provide technical and financial support to rubber and rubberwood processing units and in particular the small holding sector for improving the quality, cost competitiveness and infrastructure for marketing through various measures.

The Department mainly implemented two schemes viz., Processing Quality Upgradation and Product Diversification and Market Development approved by the Government of India for implementation during the Tenth Five Year Plan period.

Technical and financial assistance was offered to 10 block rubber factories and nine latex centrifuging factories for quality improvement, cost reduction through modernization and for strengthening environmental protection systems. Financial assistance was also given to one rubberwood processing factory for quality improvement and value addition. These activities prompted an investment of Rs.154.83 lakh in the sector and an amount of Rs.49.83 lakh was disbursed as financial assistance. Prior to the launching of the scheme, sub rules were framed and meeting was held with the processors during which time they also requested the Board for certain amendments in the scheme to bring the estate sector also under the scope of the scheme, enhancement of scale of assistance and for ceiling of amounts. These were subsequently taken up with the Ministry and since then the Ministry has advised the Board to take up such issues during the mid term review.

The installation of biomass gasifiers for drying of block rubber in place of diesel fired/electrically heated systems, under the Board's modernization scheme had generated a lot of interest among

the block rubber processors as a means to attain cost competitiveness in the post liberalization period. For the benefit of the processors, a one day seminar followed by a field visit the next day was organized and it was well attended by the processors. Experts in the field from IISC, Bangalore, Tata Energy Research Institute, New Delhi and ANERT, Trivandrum presented papers on various aspects of design, operation, maintenance and safety. The manufacturers of gasifiers gave presentations on the merits, features and cost effectiveness of their systems. Users of gasifiers gave their experience in use of gasifiers. The seminar provided a good platform for interaction among the designers, consumers and manufacturers of the gasifiers for the benefit of new users in the field.

As a result of the implementation of the scheme, there was substantial improvement in the quality and quantity of block rubber and latex concentrate produced in the country. The capacity utilisation of block rubber factories increased considerably making more block rubber available to the market. This also helped to bringing down cost of production of block rubber through saving in fuel cost and improved labour productivity. Use of biomass gasifiers have helped to bring down emissions and to conserve petroleum fuel and electricity. The above measures also helped to boost exports of processed rubber.

M/s. Envirochem, Trichur was given a consultancy assignment to study characteristics of liquid effluents generated in different types of gasifiers and to recommend suitable treatment methods.

In recognition of the efforts done by the Rubber Board in promoting and popularizing biomass



gasifiers among rubber processors, the Director(P&PD) was invited to participate in the Round Table Meeting on Gasifiers organized by UNIDO at IISC Bangalore in December 2003 on the various issues related to biomass gasifiers for thermal and power applications.

Under the scheme in implementation, financial assistance is offered for installation of gasifiers for both thermal and power applications.

Energy cost contributes to about 50% of the cost of production in block rubber. A one day seminar was organized in association with Petroleum Conservation Research Association, Cochin on efficient utilization of energy in the processing activities.

A scheme was launched for the benefit of the processors of block rubber, latex concentrate and rubberwood for conducting energy audit and to explore possibilities of cost reduction through efficient use of energy and through energy conservation. Fourteen processors applied for availing such assistance and three units had conducted energy audit.

A project was initiated for construction of a 50 tonne capacity godown for RSS grades with dehumidification facility to study the techno-economic feasibility. Under the controlled humidity conditions, chances for deterioration of the quality of rubber through fungal attack will be minimized.

In India sheet rubber is marketed in 50 kg bundles whereas in the international markets it is marketed in 111 kg bundles. To promote export of RSS grades in the internationally accepted form, a Hydraulic Press was developed for making 111 kg bales for the world market requirements. Trials were also conducted in a model Rubber Producers' Society to produce RSS grades to suit the chamber dimensions of the press by altering the size of its coagulating pans, DRC of coagulation and machine adjustment.

Training and technical support were offered to the processors of TSR and rubberwood in

processing quality control and environmental protection systems through Model TSR factory and Model Rubberwood Factory.

Loans were provided to the RPS sector engaged in rubber and rubberwood processing to strengthen the processing and marketing activities.

Under the Market Development scheme the Board continued its activities in promoting rubberwood as an eco-friendly material suited for furniture and interiors in the national and international markets. During the year the Board participated in six international fairs, two in China, one in USA, one in Japan, one in Abu Dabi and one in Dubai. Indian rubberwood was not known in the international market till recently and participation in these fairs had created an awareness about Indian rubberwood in the international market. Some enquiries had been received from the Middle East for doors and kitchen cabinet doors. During the year, Board participated in fourteen national level fairs and five state level fairs for promoting rubberwood. Technical literature/ catalogues/brochures were distributed to furniture manufacturers, architects, interior designers, decision makers and the general public to create an awareness about rubberwood. As a result of the promotional measures, IISC Bangalore decided to go for rubberwood furniture for their new hostel complex and the two companies promoted by the Board viz., Metrowood and Indiamwood supplied rubberwood furniture costing Rs.189 lakh to the new hostel complex of IISC, Bangalore. This has generated interest for using rubberwood furniture for IIT Chennai and at their request, technical support was given to them for adopting in rubberwood for the interiors of their hostel complex.

The Board also promoted rubberwood through advertisements in leading Magazines, Souvenirs and Newspapers.



The Board collaborated with the Audio Visual and Reprographic Centre of University of Calicut in preparing a documentary covering various aspects of rubberwood.

The Department continued to monitor the quality of block rubber and latex concentrate produced in the country through periodic inspections of the processing units and collection of samples for testing.

The Board also continued to check the quality of rubber imported through the designated ports of Kolkatta and Visakhapatnam. During the year, 38437 MT of rubber was inspected, out of which 38097 MT was recommended for clearance by the Customs and 340 MT was found not conforming to the prescribed quality standards.

To ensure quality of rubber being exported, the Department undertook quality check of rubber exported. During the year 18373.5 MT of block rubber was checked out of which 17853.9 MT was cleared for export and 519.6 MT rejected. Similarly, 18036 MT of latex concentrate was inspected, out of which 18020 MT was cleared for export and 16 MT rejected. During the year 41304 tonnes of RSS grades were inspected and 39505 tonnes were cleared for export and 1799 tonnes were rejected.

Interest subsidy was offered to rubber and rubberwood processors in the RPS sector. The Board supported the RPS sector in procuring computers and accessories to improve their efficiency.

The Department participated in the various training programmes and seminars organized for the benefit of the rubber growers and processors. The Department also conducted site inspections

for ascertaining the suitability for issuing new processor's licence.

The rubberwood testing laboratory provided testing facilities to rubberwood processors. Training in processing, quality control and testing was organized for students from Kerala Agricultural University Forest Research Institute, Dehradun. Research and development works on evaluation of timber quality with Etherel stimulation was jointly done with the Research Institute. Trials were conducted to find out suitable bleaching agents, threshold retention level for Boron-Boric acid and efficacy of preservative against termite attack. Experiments were also conducted to determine variation in density, dimensions and volume of rubberwood during processing. The Department attended to the various civil and electrical works of the Board.

The Board had submitted a proposal to the Government of India for exempting the machinery/equipment used for processing and quality control of TSR from payment of customs duty to help the processors to attain international competitiveness with respect to quality and cost. Accordingly the Government of India has issued notifications reducing the customs duty from 25 to 5% and exempting additional duty of customs and special additional duty of customs in the case of slab cutter, shredder, solid pump, vibrating screen, Plastimeter and ageing oven, latex centrifuging machine.

To enable processors of latex concentrate to attain international competitiveness with respect to quality, cost and packaging, a delegation of 14 processors led by Jt. Director (P&QC) and sponsored by the Government of India visited Malaysia and Thailand for six days in the month of February 2004.



PART VII

TRAINING AND TECHNICAL CONSULTANCY

The Department of Training & Technical Consultancy consists of two Divisions viz. Training Division and Technical Consultancy Division. The Training Division is conducting different training programmes for the benefit of the industry comprising the Rubber Plantation sector and Processing & Product Manufacturing sector. The Technical Consultancy Division provides technical assistance to entrepreneurs for setting up of Rubber based units, and to rubber goods manufacturers in solving their production problems and assessment of quality by testing the rubber products.

The T&TC Department also provides technical support and guidance for the export of raw rubber.

TRAINING DIVISION

The Training Division imparts training on various aspects related to rubber cultivation, rubber processing and rubber products manufacturing for making available trained manpower for the overall development of the industry

The major target group identified for training are -

- * Farmers
- * Managers/Superintendents
- * Rubber Producers Societies
- * Rubber Marketing Societies
- * Rubber Dealers
- * Rubber Processors
- * Rubber Products Manufacturers
- * Entrepreneurs
- * Rubber and Rubber Products Exporters
- * Production Managers
- * Quality Control Managers
- * Women including SC/ST categories
- * Students
- * Participants from abroad

The centre aims to achieve the following objectives.

- Update the technical and managerial competitiveness of the rubber growers and rubber plantation workers.
- Impart suitable training to rubber processors and rubber products manufacturers so as to achieve better quality and competitiveness.
- Update the technical and managerial competitiveness of Rubber Producers Societies (RPS) and Rubber Marketing Co-operative Societies.
- Develop the required aptitude and manager skills of the employees of the Board.

During the year under report, training programmes in 127 batches were conducted and the total number of beneficiaries were 4345 out of which 1015 persons were from the SC/ST/Women category. A brief profile of the beneficiaries are -

Category	No. of beneficiaries
* Farmers (under general & decentralized training programmes)	2493
* Visit-cum-training (Sastradarsan)	963
* Tappers	314
* Employees of the Board	142
* Rubber Processing & Quality Control	129
* Marketing Management	129
* Rubber Product Manufacture	120
* Rubber Technology students	25
* Rubber Cultivation & Plantation Management	19
* Marketing Management	11
Total	4345

**TECHNICAL CONSULTANCY DIVISION**

The Technical Consultancy Division provides technical assistance to promote rubber goods manufacturing industry in the country. The major activities of the Division are providing of technical assistance to entrepreneurs for the setting up of rubber based industries, solving production problems of the existing units and quality control by testing rubber/rubber chemicals/rubber compounds/rubber products as per national and international standards, product development, training programmes etc. The Division also undertakes promotional activities like conducting workshops and seminars; preparation of market survey reports, trade directories etc for the

manufacturing sector. All these services are offered on a consultancy basis. Besides academic and applied R&D works are also undertaken.

With a view to increasing the consumption of Natural Rubber, the Division is engaged in the setting up of Rubber Industrial Parks in Kerala, Tamil Nadu, and Tripura and exploring new areas for the application of Natural Rubber. The scheme on rubberisation of roads was continued and two collaborative projects - one on Seismic Bearings with SERC, Chennai and the other on canal lining with KERI, Peechi, Kerala, were also undertaken.

The above activities were continued this year also and some of the major items for the period under report are summarized below:

Activity	April 2003- March 04
I TECHNICAL SUPPORT TO INDUSTRY	
a. Purchase of testing equipments	Purchased few items and steps were taken for other targeted items. Implementation done on trial basis. 2000 Numbers
b. NABL Accreditation	
c. Consultancy/ Advisory works	
- Preparation of Project Reports/Project schemes	
- Product Development	
- Quality control	
- Training activities/Academic works etc.	All programmes arranged by Training Division & Specialised training arranged by TC Division Rs.5.20 lakh
Consultancy fee charged	
II RUBBER PARK, COCHIN	90% of works has been completed.
III SCHEMES ON DIVERSIFIED USES OF NR	
1) Rubberisation of roads	Phase II evaluation work completed, finalized the proposal for project roads, conducted promotional works.
2) Seismic Bearings	Finalized the Design of the Bearings, fabricated one set of mould. Using this mould, 4 nos. of bearings were fabricated and forwarded to SERC for evaluation. An amount of Rs. 3.00 lakh has been given to SERC as per the MOU. Second stage fabrication of the bearing is being arranged.
3) Canal Lining	Initial trials were encouraging and the pond trials are progressing
IV MAJOR ACHIEVEMENTS	Developed Industrial, Agricultural and Yoga mats for export based on dry NR. Developed Animal Teats based on dry NR to one client from Sri Lanka. One officer from the TC Division has been nominated as a member of the working Group on NR Protein Allergy by ANRPC, Kuala Lumpur.

PART VIII

Rubber Board



FINANCE & ACCOUNTS

The Finance & Accounts Department is concerned with designing and operating the Accounting system, preparing budget, financial statements and reports, exercising budgetary control, effective Funds Management, establishment and maintaining systems and procedures, overseeing internal audit and arranging for Statutory audit, advising on financial propriety and regularity of transactions, supervising computer applications, overseeing cost control, evaluation of projects/schemes, handling tax matters etc. The following activities were undertaken by the Department during the year under report.

1. Preparation of Annual Budget, Performance Budget, Foreign Travel Budget etc.
2. Budgetary control of expenditure against sanctioned Budget.
3. Maintenance of the accounts of the Board, preparation of Annual Accounts and Balance Sheet, presentation of the accounts for audit by the Accountant General, Kerala and the audited accounts to the Rubber Board/Ministry/Parliament.
4. Placing demands for grant from Govt. from time to time, receiving funds from Government and ensuring its optimum utilization.
5. Advising on financial propriety and regularity of transactions and regulating payments.
6. Assisting the Cost Accounts Branch of the Ministry of Finance in ascertaining the cost of production and in fixing price of Natural Rubber.
7. Preparation of financial statements for project reports and schemes.
8. Dealing with Central Income Tax, Agricultural Income Tax and Sales Tax matters relating to the activities of the Board.
9. Co-ordinating the activities of the Companies jointly promoted by the Rubber Board and Rubber Producers Societies approved by the Board.
10. Computerised Data Processing in the field of financial accounting, pay roll etc.
11. Drawal and disbursement of pay and other entitlements of the employees of the Board based on the orders issued by Govt. of India from time to time.
12. Management of the Rubber Board Employees Pension Fund and Rubber Board Employees General Provident Fund.
13. Co-ordinating the Computerisation and Networking of all Departments of the Board.

Annual Accounts 2002-03

Annual Accounts for the year 2002-03 were presented to AG Kerala within the stipulated time. The Audit Report and the Audited Accounts with the certificate received from the AG Kerala were adopted by circulation and submitted to the Ministry of Commerce & Industry for placing the same on the table of both houses of Parliament.

Revised Estimates 2003-04 and Budget Estimates 2004-05

The Revised Budget for 2003-04 and Budget Estimates for 2004-05 were prepared within the time frame and submitted to the Government. Budget sanctioned for the year 2003-04 was Rs.108.21 crore comprising Rs.94.08 crore under Plan and Rs.14.13 crore under Non Plan, against which the actual expenditure for the year was



Rs.104.92 crore (Plan Rs.90.05 crore and Non Plan Rs.14.87 crore). The sanctioned budget for the year 2004-05 is Rs.109.04 crore comprising Rs.94.00 crore under Plan (Budgetary support of Rs.90.00 crore and IEBR of Rs. 4.00 crore) under Plan and Rs.15.04 crore under Non Plan (Budgetary support - Rs.11.00 crore plus I&EBR - Rs.4.04 crore).

Management of Funds

General Fund

Funds amounting to Rs.91.33 crore was received from Government as budgetary support during the year 2003-04. The internal resources during the year was about Rs.10.86 crore. The total expenditure during the year was Rs.104.92 crore.

General Provident Fund/Pension Fund

The balance under the General Provident Fund as on 31st March 2004 was Rs.22.00 crore and that under Pension Fund Rs.13.63 crores. The accumulations in the funds are invested in long-term securities to obtain optimum returns. The Board is maintaining GPF accounts for 2086 subscribers. There were 589 pensioners on the rolls during the year.

Cost Accounts

The Cost Accounts Division of the F&A Dept. continued to collect, analyse and update cost data.

Information sought for from the Government, Statutory Bodies and other agencies were furnished as and when required.

The Finance and Accounts Department, examined various aspects relating to Sales Tax and Agricultural Income Tax matters and appropriate advice were given.

Internal Audit

The Internal Audit Division is headed by the Internal Audit Officer under the functional control of Director (Finance). It is an important tool of the Chairman to ascertain the state of affairs and the conditions of the working of different Departments/Divisions/Sections/Offices/ Establishments and for setting matters right by taking prompt remedial measures. The Division assists various Departments in discharging their functions more effectively. The Internal Audit Division also undertakes the liaison work for the audit of the Accounts of the Board by Accountant General (Audit), Kerala.

During the period under report Internal Audit/ Inspection was conducted in 52-offices/ establishment of the Board.

Electronic Data Processing

The Electronic Data Processing Division looks after procurement and maintenance of Hardware/ Software requirements of all the Departments of the Board.

PART IX

Rubber Board



LICENSING & EXCISE DUTY

The Rubber Board is vested with powers of assessment and collection of duty of excise (cess) on all rubber produced in India under Section 12 of the Rubber Act 1947. The cess so collected reduced by the cost of collection, is remitted to the Consolidated Fund of India. Transactions in natural rubber are regulated by licences issued under Section 14 of the Rubber Act 1947. Board is vested with the powers of issuing licences under Section 14 of the Rubber Act 1947. Interstate transport of rubber is also regulated by a declaration in Form 'N' prescribed under Rule 43 of the Rubber Rules 1955. Inspections are conducted periodically to verify the correctness of the books of accounts maintained by the rubber dealers, processors and manufacturers of rubber products in respect of the rubber acquired, disposed and stock held by them.

These functions are monitored/discharged by the Licensing and Excise Duty Department of the Rubber Board which consists of Excise Duty Division, Licensing Division and Market Intelligence Division. The functions discharged by these Divisions are summarized below:

EXCISE DUTY DIVISION

The issuance of licence to manufacturers to acquire rubber, assessment of the duty of excise (cess) on rubber, its collection and remittance to the Consolidated Fund of India, are the important functions attended to by the Excise Duty Division.

Issuance of Licence

Issue of Licence for the year 2003-04

The function of issue of licence includes the work of issue of new licences to prospective manufacturing units and renewal of the existing licence for the subsequent year. The details of

licences issued during 2003-04 are furnished below.

Fresh Licence	:	241	Nos.
Renewal of Licence	:	4559	Nos.
Total		4800	Nos.

During the period, licences in respect of 9 units were cancelled on the basis of request. The total number of licensed manufacturers as at the end of 31.3.2004 was 4791. The state-wise distribution of licensed manufacturers as at the end of 31st March 2004 is detailed hereunder:-

Name of State/Union Territory	Number of units
Kerala	851
Maharashtra	563
Tamilnadu	483
Punjab	478
Uttar Pradesh	419
West Bengal	409
Gujarat	368
Haryana	324
Delhi	206
Karnataka	194
Andhra Pradesh	160
Rajasthan	109
Madhya Pradesh	67
Pondicherry	30
Jharkand	25
Goa	18
Dadra & Nagarhaveli, Daman & Diu	15
Orissa	12
Uttaranchal	11
Chandigarh	10
Chattisgarh	10
Assam	9
Himachal Pradesh	8
Jammu & Kashmir	7
Tripura	3
Bihar	2
	4791



The Division prepared the list of licensed manufacturers for reference to the various offices of the Rubber Board, Rubber Dealers and other public.

Renewal of Licence for the year 2004-05

During the period, the licences in respect of 2999 manufacturers were renewed for the year 2004-05.

Registration of letter of authorization to purchase rubber by agent / dealers on behalf of manufacturers

828 letters of authorization were registered during 2003-04.

Letter of authorisation to purchase rubber

During the year, special authorization to 8 organizations/ institutions to acquire rubber for experimental purposes were issued in lieu of regular licences after collecting the cess in advance.

Assessment and collection of Duty of Excise (Cess) on Rubber

The total amount of cess on rubber assessed during 2003-04 was Rs.8797 lakh against Rs.8206 lakh during 2002-03. The duty of excise (cess) on rubber collected during the period under report was Rs.8501 lakh against Rs.8204 lakh collected during the previous year. The total number of half yearly returns (Form 'M') collected from the manufacturers during the year was 9836. The Liaison Officers and the Inspecting Staff functioning at various parts of the country had furnished 2179 individual inspection reports, on which appropriate actions were taken/initiated.

The total amount of licence fee and service charges collected from the manufacturers during 2003-04 was Rs.9,59,631/-. Besides a sum of Rs.16 lakh was collected towards interest on belated remittance of cess.

LICENSING DIVISION

Licensing of rubber dealers and processors and registration of their branches and agents, initiation of punitive action against erring dealers and processors are the main functions of the Licensing Division situated at Kochi.

Licensing of Dealers

1185 new licences were issued during the year for a period of three years. 1985 licences were renewed during the period under report for a period of five years. The total number of licensed dealers as on 31.3.2004, was 9842. Of this, 8737 were in Kerala.

State-wise distribution of licensed dealers

Name of State/Union Territory	Number
Kerala	8737
Tamilnadu	195
Punjab	152
Tripura	119
Karnataka	118
Delhi	112
Maharashtra	105
West Bengal	71
Uttar Pradesh	65
Haryana	42
Gujarat	40
Assam	24
Rajasthan	21
Meghalaya	15
Andhra Pradesh	6
Chandigarh	4
Pondicherry	4
Nagaland	3
Jharkhand	3
Madhya Pradesh	2
Goa	2
Chattisgarh	1
Andaman & Nicobar Islands	1
Total :	9842



District-wise Distribution of dealers in Kerala

Name of District	No. of Dealers
Kottayam	2205
Kollam	1256
Ernakulam	1093
Pathanamthitta	1081
Thiruvananthapuram	796
Kannur	445
Malappuram	431
Idukki	394
Palakkad	368
Kozhikode	190
Alappuzha	168
Thrissur	167
Kasargod	86
Wynad	57
Total	8737

Licensing of Processors

The total number of Licensed Processors as on 31st March 2004 was 130. 35 Processors' licences were also renewed for the period 2004-2009.

Suspension/revocation/cancellation of license of dealers and Processors

During the year, 67 dealers' licences and one processor's license were cancelled. The licences of 11 dealers were suspended for violation of the provisions of the Rubber Act and Rules. The licences of 209 dealers were cancelled.

Registration of Branches and Agencies

During the year under report, 370 branches of dealers were registered making the total number of branches of dealers at 987 as on 31st March 2004. Besides, 353 letters of authorization were also registered during the year.

MARKET INTELLIGENCE DIVISION

Market Intelligence Division is functioning as an effective system to prevent evasion of cess

on rubber. The important functions of MI Division are –

- Inspection of business premises of rubber dealers and verification their accounts and records for the purpose of ascertaining the correctness of the statement and returns etc. submitted to the Board.
- Conducting inspections to ascertain the genuineness of application for licence to deal in rubber, registration of branches etc.
- Detection of bogus and unlicensed dealers and adoption of steps to prevent malpractices in rubber trade including malpractices in grading.
- Cross verification of the statutory returns filed by dealers/manufacturers and processors for ascertaining the correctness of the transactions reported by them.
- Surprise checking on movement of rubber through different modes of transport, with a view to preventing evasion of cess on rubber.
- Strengthening the surveillance on interstate movement of rubber at the commercial tax checkpoints at Walayar & Manjeswaram in Kerala and Kavalkinar in Tamilnadu.

The functions discharged by the Division are briefly shown below.

Activities of Inspection Squad

- The inspection squad which functioned at Kochi, Kottayam and the Inspectors (Market Intelligence) at Palakkad, Thaliparamba and Marthandam helped to a great extent in arresting illicit trade in rubber and thereby improve the cess collection. The inspection also helped in collecting monthly returns from a large number of delinquent rubber dealers.
- During the period under report, the squad/ Inspectors (MI) inspected the business premises of 1454 licensed dealers and 126



unlicensed dealers. Irregularities in 391 cases involving unaccounted stock/irregular sales, shortage etc. to the tune of 1546 tonnes were detected. A sum of Rs. 24,71,269/- was also collected towards cess on rubber from the cases involved. The Squad also conducted 555 road checking, 67 surprise visits to checkpoints, 15 visits to Railway Parcel Offices and border areas. These inspections helped in arresting illicit movement of rubber consignments to a great extent.

- Special attention was also given for scrutiny of inspection reports, Form N declarations/ daily statement from checkpoints and wherever irregular dispatches were made such cases were timely referred to Liaison Officers/Inspectors (MI Squad) for arranging inspection. On the basis of serious irregularities detected, the licence of 9 dealers were suspended. A sum of Rs. 5,72,784/- was also collected towards cess involved in the above cases.

Checkposts/Interstate movement of rubber

- In order to strengthen surveillance of interstate movement of rubber, regular checking of the documents accompanying the rubber consignments were done at the three commercial checkpoints at Walayar in Palakkad District and Bengra Manjeswaram in Kasargode District of Kerala and Kavalkinar in Thirunelveli District of Tamilnadu.
- The surveillance exercised through the three checkpoints helped in detecting illicit transport of rubber. During the period under report, the officials at Walayar, Manjewaram and Kavalkinar checkpoints detained 161 consignments of rubber for various lapses and were allowed to cross the border on production of valid documents/ satisfactory explanation/remittance of cess. A sum of

Rs. 6,62,846/- was collected towards security deposit equivalent to the cess involved on the quantity as the consignors failed to produce proper evidence/explanation for the lapses. Moreover, the Board's officials at the checkpoint/Inspectors (Market Intelligence) rendered necessary assistance to the Commercial Tax/Police officials when necessary information was sought by them for disposing of suspicious consignments detained by them. The Squad detected clandestine transport of rubber and collected Rs.10,02,666/-.

- During the period under report, as per daily statement received from the three checkpoints 42,038 consignments of rubber had passed through these check posts.

1. Walayar Checkpost	:	23493
2. Manjeswaram	:	9665
3. Kavalkinar	:	8880
Total	:	42038

- During 2003-04, 16500 books of Form 'N' declarations under different categories were got printed and 15323 form N books were supplied to various estates, processors, dealers and manufacturers. 62823 Nos of Form N declarations were received at Market Intelligence Division and most of the same were scrutinized. Wherever discrepancies were noticed, explanation/clarifications were obtained for from the concerned parties and appropriate action taken.

Cross checking of monthly returns

- The monthly returns and copies of Form 'N' declarations received from various dealers manufacturers/processors/estates were cross checked at random and detected discrepancies in 260 cases. A sum of Rs.46,40,519/- was also realized in the case of irreconcilable transactions.



- Thus on account of special efforts put in by Inspection Squad, the checkpost machinery and crosschecking etc. a total amount of Rs.1,05,26,981/- could be collected towards cess during the year 2003-04 as against Rs.46,50,002/- collected during 2002-03.

SUB OFFICES / LIAISON OFFICES

With a view to improve collection of cess on rubber and to maintain liaison with various Ministries, trade and industry, Board maintains 9 Sub Offices in the major rubber consuming centres at Chennai, Bangalore, Secunderabad, Ahmedabad, Kanpur, Mumbai, Kolkata, Jalandhar and New Delhi. Their functions include assessment of the suitability of applicants who apply for licences to deal in rubber/acquire rubber

for rubber goods manufacturing and pursue collection of cess on rubber and returns from the manufacturers and dealers. The purchases made by the rubber goods manufacturers and dealers and stock held by them were verified at random. Verifications of the books of accounts and records of the dealers and manufacturers were also done to ensure that all rubber procured by them were properly accounted and subjected to assessment of cess and that the transactions reported in their returns submitted to the Board are true and correct. Surprise inspections were conducted to detect unlicensed dealing in rubber and manufacturing of rubber goods in contravention of the provisions of the Rubber Act and Rules in order to prevent loss of revenue towards cess.



PART X

STATISTICS AND PLANNING

GENERAL STATISTICS

The activities undertaken by the S&P Department during the period April 2003 to March 2004 included regular monitoring of the data on supply, demand, stock and price of natural rubber and presenting them to the Board and the government. Demand-Supply position of natural rubber was reviewed periodically by the Board which met on 29/5/03, 19/7/03, 30/11/03 and 29/03/2004. For discussions in these meetings, notes supplemented with statistical data reflecting the current and future scenarios in the NR sector were prepared by the Department.

The statutory monthly returns collected every month from rubber growers, dealers, processors and manufacturers were compiled and analysed. In order to ascertain the monthly variation in production and stock in the small rubber holding sector, sample studies were continued. The data collected from various sources were compiled and production, consumption, import and stock of rubber were worked out on monthly basis. The required statistical information for publishing the 'Rubber Statistical News' (monthly) was prepared. This publication covered trend in production, consumption, stock, import/export of natural rubber, synthetic rubber and reclaimed rubber, price of natural rubber and many other details. Board published Indian Rubber Statistics Vol.26, 2003 in June 2003. The publication covered detailed information on area under rubber, and production, consumption, import, export, price etc of natural, synthetic and reclaimed rubber, manufacturers, dealers, rubber products, labour, etc besides world rubber statistics.

The Department furnished relevant statistical information to the Government and various

organizations connected with the rubber industry. For answering Parliament questions and Legislative Assembly questions pertaining to import/export, production, price etc of rubber and the various aspects of rubber industry, necessary materials were furnished.

To ascertain the production of various grades of rubber, installed capacity, etc during 2002-2003, annual reports were collected from processors of centrifuged latex, block rubber, PLC and crepe mills. Annual returns relating to the year 2002-2003 were collected from manufacturers of rubber products to work out consumption of rubber according to end products. Classification of manufacturers according to consumption, state-wise consumption of NR, SR, RR were prepared from the monthly returns collected from manufacturers. Annual returns from large growers were also collected in order to compile various statistical data.

PLANNING

Annual Plan proposals for 2004-05 on natural rubber were prepared and presented to the Govt. for approval. A comprehensive note on achievements of the Board and review of rubber plantation industry was prepared and presented to the Government.

Action Plan for 2003-04 was prepared and Quarterly Review Reports were regularly prepared and submitted.

SUPPLY OF INFORMATION TO WORLD ORGANIZATIONS

The S&P Department continued to supply information about the NR industry in India to world organizations like the Association of Natural Rubber Producing Countries (ANRPC), Kuala



Lumpur, Malaysia and International Rubber Study Group (IRSG), London.

On behalf of the Govt. of India, Chairman, Rubber Board participated in the IRRDB meeting at Chiagmain in Thailand in September, '03, 27th meeting of the ANRPC Executive Committee in

Malaysia in September, '03 and Xth Meeting of the ANRPC Co-ordinating Committee on Production and Marketing Strategies in Malaysia in February, '04. Joint Director (S&P) also participated in the 12th meeting of the ANRPC Committee on NR Statistics held at Colombo in November, '03.



PART XI

STATISTICAL TABLES

Table-1 PRODUCTION, IMPORT, EXPORT & CONSUMPTION OF NR

(Tonnes)

Month	Production	Import*	Export	Consumption (Indigenous & imported)
April 2003	45580	815	1180	54130
May "	49960	6095	1244	58095
June "	47035	4519	1898	60275
July "	49485	5377	3046	61450
August "	56950	8186	5461	61205
September "	64815	3651	7197	60310
October "	71290	2295	8232	58325
November "	85325	1129	10814	61405
December "	88450	1056	6346	63205
January 2004	77545	2457	6337	61175
February "	36455	2848	10410	59825
March "	38760	5771	13740	60200
Total	711650	44199	75905	719600

* Source: DGCI & S, Calcutta.

Table-2 STOCK OF NATURAL RUBBER AT THE END OF EACH MONTH

(Tonnes)

Month	Growers, dealers & processors	Manufacturers	Total
April 2003	61010	49725	110735
May "	61255	43740	104995
June "	55550	42830	98380
July "	54060	33060	87120
August "	51270	32490	83760
September "	54765	28275	83040
October "	61075	28320	89395
November "	71720	31320	103040
December "	84930	38410	123340
January 2004	92675	43465	136140
February "	60770	44390	105160
March "	30660	46635	77295



Table-3 PRODUCTION,IMPORT& CONSUMPTION OF SYNTHETIC RUBBER

(Tonnes)

Month		Production*	Import**	Consumption
April	2003	6040	13417	15030
May	"	6548	10894	16660
June	"	5687	13068	16795
July	"	7883	11844	17210
August	"	7029	14187	17515
September	"	8402	16518	17625
October	"	6954	14923	17540
November	"	7797	16316	18355
December	"	7780	17965	18865
January	2004	8551	15270	18820
February	"	7563	18778	17530
March	"	8132	6950@	18245
Total		88366	170130	210190

* Provisional

** Source:DGCI & S, Calcutta.

@: estimated.

Table-4 PRODUCTION & CONSUMPTION OF RECLAIMED RUBBER

(Tonnes)

Month		Production*	Consumption
April	2003	5305	5265
May	"	5695	5645
June	"	5735	5695
July	"	5915	5880
August	"	5960	5930
September	"	6210	6165
October	"	6270	6220
November	"	6215	6185
December	"	6190	6140
January	2004	6015	5950
February	"	5625	5570
March	"	5855	5815
Total		70990	70460

* Indigenous purchase by manufacturers



Table-5 MONTHLY AVERAGE PRICE OF VARIOUS GRADES OF NATURAL RUBBER IN INDIA

(Rs/Quintal)

Month	RSS 1	RSS 2	RSS 3	RSS 4	RSS 5	ISNR 5	ISNR 10	ISNR 20	ISNR 50
April 2003	5467	5367	5267	5074	4943	5313	5213	5023	4852
May "	5175	5075	4975	4851	4749	4979	4879	4695	4577
June "	5176	5076	4976	4829	4719	5064	4964	4765	4660
July "	4815	4735	4635	4453	4286	4694	4594	4282	4194
August "	5024	4924	4824	4693	4490	4802	4702	4404	4302
September "	5152	5052	4952	4849	4655	4923	4823	4533	4417
October "	5494	5394	5294	5155	4978	5296	5196	5002	4802
November "	5716	5616	5516	5346	5148	5598	5498	5260	5062
December "	5659	5559	5459	5315	5092	5556	5456	5156	5031
January 2004	5510	5410	5310	5153	5014	5475	5375	5071	4958
February "	5587	5487	5387	5192	5087	5502	5402	5130	5013
March "	5944	5844	5744	5567	5436	5800	5700	5489	5378
YEARLY AVERAGE	5393	5295	5195	5040	4883	5250	5150	4901	4771

Table-6 MONTHLY AVERAGE PRICE OF VARIOUS GRADES OF NATURAL RUBBER IN BANGKOK MARKET

(Rs/Quintal)

Month	RSS 1	RSS 2	RSS 3	RSS 4	RSS 5	STR 5	STR 10	STR 20
April 2003	4882	4816	4755	4722	4673	4429	4351	4307
May "	4757	4690	4628	4595	4545	4232	4154	4110
June "	4915	4848	4786	4752	4702	4302	4224	4179
July "	4717	4651	4590	4556	4507	4185	4107	4063
August "	4890	4823	4763	4730	4680	4476	4398	4354
September "	5162	5095	5032	4998	4948	4932	4852	4807
October "	5874	5800	5737	5703	5651	5938	5756	5735
November "	6085	6017	5954	5920	5869	5748	5673	5625
December "	5793	5724	5661	5627	5575	5757	5678	5631
January 2004	5806	5736	5672	5637	5585	5665	5584	5538
February "	5878	5809	5745	5710	5658	5729	5652	5606
March "	6139	6071	6008	5974	5923	5989	5909	5863
YEARLY AVERAGE	5408	5340	5278	5244	5193	5115	5028	4985

LIST OF MEMBERS OF THE RUBBER BOARD AS ON 31.03.2004

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|---|--|--|
| 1 | Shri S Maria Desalphine, IAS | Chairman, Rubber Board |
| 2 | Shri Ettumanoor Radhakrishnan,
Vice-Chairman, Raghavamandiram,
Onamthuruth PO
Via. Kaippuzha - 686 602.
Ettumanoor, Kottayam Dist. | Representative of Other Interests under clause (d) of sub section (3) of section 4 of the Rubber Act 1947. |
| 3 | Shri Vayalar Ravi,
Hon'ble Member of Parliament,
AICC General Secretary,
AICC Office, 24, Akbar Road,
New Delhi - 110 011. | Member of Parliament under clause (e) of sub-section (3) of section 4. |
| 4 | Secretary to Government,
Environment & Forest Dept,
Govt.of Tamilnadu, Chennai - 9. | Representative of Govt.of Tamilnadu under clause (b) of sub-section (3) of section 4. |
| 5 | Agri. Production Commissioner,
Govt.of Kerala, Govt.Secretariat,
Thiruvananthapuram - 695 001. | Representative of Govt.of Kerala under clause (c) of sub-section (3) of section 4. |
| 6 | Commissioner & Secretary,
Dept.of Tribal Welfare,
(Dept.dealing with Plantation)
Govt.of Tripura, Agartala. | Representative of Other Interests under clause (d) of sub section (3) of section 4. |
| 7 | Shri Raghupathi Singhanian,
Managing Director,
JK Industries Ltd., Link House,
Bahadurshah Zafar Marg,
New Delhi - 110 002. | Representative of Rubber Goods Manufacturers under clause (d) of sub- section (3) of section 4. |
| 8 | Shri A Jacob, FCA
Managing Director,
Velimala Rubber Co.Ltd.,
Opppoottil Buildings
KK Road, Kottayam - 686 001. | Representative of large grower from the State of Kerala under clause (c) of sub- section (3) of section 4. |
| 9 | Shri K Jacob Thomas,
Managing Director,
M/s. Vaniampara Rubber Co.Ltd.,
Vazhakala Building, KK Road,
Kottayam - 686 001. | Representative of large grower from the State of Kerala under clause (c) of sub-section (3) of section 4. |



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| 10 Shri MD Joseph,
Manniparambil,
Kanjirappally - 686 507. | Representative of large grower from the State of Kerala under clause (c) of sub- section (3) of section 4. |
| 11 Shri S Ramachandran,
Director,
Vaikundam Plantations Ltd.,
PB No.1004, Geetha Vihar,
2/3309, Chalakuzhy Road,
Pattom Palace PO,
Thiruvananthapuram - 695 004. | Representative of large grower from the State of Tamilnadu clause (b) of sub-section (3) of section 4. |
| 12 Prof. KK Abraham,
Chairman,
Indian Block Rubber Producers' Association,
Kayathinkara
Marthoma Church Road, Pala. | Representative of Other Interests under clause (d) of sub- section (3) of section 4. |
| 13 Shri C Ananthakrishnan,
Puthen Veedu,
Veeyannoor PO, Thiruvattar (Via),
Nagercoil, Kanyakumari Dist. | Representative of Labour Interests under clause (d) of sub section (3) of section 4. |
| 14 Adv. P Lalaji Babu,
Lalee Vilas, Bharatheepuram PO,
Kollam Dist., Kerala. | Representative of Labour Interests under clause (d) of sub-section (3) of section 4. |
| 15 Shri Kanam Rajendran,
Kochukala Purayidom,
Kanam PO,
Kottayam - 686 515. | Representative of Labour Interests under clause (d) of sub-section (3) of section 4. |
| 16 Shri PB Sathyan,
Plavada Kochuveedu,
South Vazhakulam PO,
Aluva - 683 105. | Representative of small growers from the State of Kerala under clause (c) of sub- section (3) of section 4. |
| 17 Shri PR Muralaedharan,
Pathalil House,
SN Puram PO, Pampady,
Kottayam - 686 502. | Representative of small growers from the State of Kerala under clause (c) of sub- section (3) of section 4. |
| 18 Managing Director,
Plantation Corporation of Kerala Ltd.,
Kottayam - 686 004. | Representative of Govt. of Kerala under clause (c) of sub-section (3) of section 4. |
| 19 Shri Thomaskutty,
Paragon Rubber Industries,
45A, 2 nd Phase,
Peenya Industrial Area.
Bangalore - 560 058. | Representative of Rubber Goods Manufacturers under clause (d) sub- section 3 of section 4. |

20 Adv. MS Karunakaran,
BMS Office, Manjammattathil,
Opp. Railway Station
Kottayam.

Representative of Labour Interests under clause
(d) of sub-section (3) of section 4.

21 Adv. Ashokavanam Chandrasenan
Gowreesam,
Edaikodu PO – 629 152
Kanyakumari Dist., Tamil Nadu.

Representative of Other Interests under clause (d)
of sub-section (3) of section 4.

22 Shri Georgekutty Augusthy,
Cheeramkunel House,
Inchiyani PO, Parathode
Kottayam – 686 512.

Representative of small growers from the State
of Kerala under clause (c) of sub-section (3) of
section 4.

23 Dr. AK Krishnakumar,
Rubber Production Commissioner,
Rubber Board, Kottayam-2.

Ex-officio member as per clause (f) of sub section
(3) of section 4.