

ANNUAL REPORT

2020 – 21



THE RUBBER BOARD
MINISTRY OF COMMERCE & INDUSTRY
GOVERNMENT OF INDIA
KOTTAYAM – 686 002

CONTENTS

PART - I.	INTRODUCTION	5
PART - II.	CONSTITUTION AND FUNCTIONS	11
PART - III.	ADMINISTRATION	14
PART - IV.	RUBBER PRODUCTION	27
PART - V.	RUBBER RESEARCH	50
PART - VI.	TRAINING	64
PART - VII.	FINANCE AND ACCOUNTS	81
PART - VIII.	LICENCING AND EXCISE DUTY	83
PART - IX.	STATISTICS AND PLANNING	84
PART - X.	DIVISIONS UNDER THE DIRECT CONTROL OF THE EXECUTIVE DIRECTOR OF THE BOARD	85
PART - XI.	LIST OF MEMBERS OF THE BOARD	106
	ANNEXURE - I	107
	ANNEXURE - II	110

PART - I**INTRODUCTION**

India occupies the sixth position in global ranking in terms of production of natural rubber (NR) during the year 2020, by accounting for 5.3 % of the total world production of 13.01 million tonne. In terms of consumption of NR, India continued to be the second largest consumer of NR, by accounting for 8.2% of the global consumption of 12.71 million tonne in 2020.

Performance of Natural Rubber Sector during 2020–21**Production**

India produced 715,000 tonne of NR during 2020-21 as compared to 712,000 tonne during 2019-20, registering a growth of 0.4 % compared to a notable growth of 9.4 % registered during the previous year. The growth in production even in the midst of COVID-19 pandemic could be achieved by the initiatives of the Board like timely support for rainguarding, promotion of self tapping, tappers intensive skill development programmes, harvesting of untapped area through adoption, intervention for disease control coupled with high price and continuation of Rubber Production Incentive Scheme (RPIS) launched by Government of Kerala. Even though the tappable area under rubber was 692,900 ha during 2020-21, only 496,000 ha (71.6%) contributed to the NR production during the year.

The average yield, measured in terms of production per hectare of tapped area decreased to 1,442 kg/ ha in 2020-21 from 1,459 kg/ha in the previous year. Production of NR comprised 64.7 % Ribbed Smoked Sheet (RSS), 20.1 per cent Technically Specified Rubber (TSR), 12.4 % latex concentrates and 2.8 % other forms.

Consumption

India consumed 10, 96,410 tonne of NR in 2020-21, down 3.3% from 11,34,120 tonne consumed in 2019-20. The auto tyre sector registered a growth of 3.2% during the year 2020-21 as against a high negative growth of 12.5 % recorded during the year 2019-20. At the same time, the general rubber goods sector registered a negative growth of 16.4% during

2020-21 compared to a positive growth of 8.6% during 2019-20.

Auto-tyre manufacturing sector accounted for 71.2% of the total NR consumed in the country during 2020-21. Consumption of NR consisted of 47.6 % RSS, 42.3 % TSR, 7.7 % latex concentrates and 2.4 % other forms during 2020-21.

Import

The import of NR declined during 2020-21 by 10.2 % to 410,478 tonne from 457,223 tonne during 2019-20. During 2020-21, block rubber constituted 86% of the total NR import. Among the source countries of imports of NR, Indonesia dominated with a share of 39% in the total volume imported during 2020-21, followed by Vietnam (18%) and Cote D'Ivoire (11%). Import of NR during the year 2020-21 is valued at US\$ 624.35 million (₹ 4,619.76 crore).

Export

The volume of NR exports from the country also decreased to 11,343 tonne during 2020-21 from 12,872 tonne in 2019-20. Export of NR during 2020-21 was mainly in the form of latex concentrates (76%) and the main destination country was China. Export of NR during the year 2020-21 is valued at US\$ 16.67 million (₹123.28 crore).

Stock of NR

The total stock of NR with growers, processors, traders, and manufacturers at the end of March 2021 was estimated at 348,816 tonne, inclusive of unprocessed form of rubber held by growers, dealers and processors.

NR prices

Due to Covid-19 pandemic and consequent lockdown during March & April 2020, RSS 4 grade rubber prices showed a declining trend and it hovered in the range of ₹ 115 to ₹130 per kg in the beginning. But gradually it moved upward and reached to ₹150 per kg in the mid October 2020. Further, it increased to ₹164 per kg during December 2020 due to supply crunch caused by heavy rain as well as off season and hovered around ₹150 to ₹160 per kg. RSS4 price peaked at ₹171 per kg on 16th March 2021 and however, the domestic rubber prices remained subdued in later days due to resurgence of Covid-19 cases and lockdown imposed in major rubber consuming states.

Indian NR price generally moves in tandem with global NR price. In the global market, RSS 3 prices moved from 105 per kg in the beginning of 2020 and hovered between ₹105 and ₹130 per kg. Then, the international prices began to increase by the end of August 2020 and went above ₹150 per kg during the 2nd week of October 2020 and peaked at ₹ 201.56 per kg on 28th October 2020. After that, RSS 3 prices showed a declining trend and hovered in the range of ₹160 to ₹170 per kg range till end of March 2021.

NR market was influenced by a combination of many factors including supply–demand variation. Although a few factors related to the physical markets, the subdued conditions in the futures markets too prevented the physical prices from gaining momentum. Initially the domestic RSS 4 price ruled above the international RSS 3 price up to August 2020 but later, the trend reversed from September 2020 onwards and the international price ruled above the domestic price during the rest of the year 2020-21.

The global economic outlook improved due to stimulus measures launched by a number of countries and resumption of business operations driven by the vaccine rollouts to combat COVID-19. Improving global economic activities have scaled-up the outlook on the demand for NR. Global consumption of NR is anticipated to increase 6.7% to 13.7 million tonne in 2021. The supply of NR has disrupted due to heavy rains experienced in the second half of May in most parts of Thailand, Malaysia and India as well. The processing of TSR, latex and RSS was also disrupted due to the resurgence of COVID-19 cases in Thailand, Vietnam, India & Malaysia. This inadequacy disrupted the workforce and created disorder in the supply-chain logistics of rubber. The monthly average price of NR in domestic and international market is furnished in Table 1.

Table 1. Price of Natural Rubber during 2020-21 (₹ per quintal)

Month	Sheet Rubber		ISNR 20/ SMR 20		Latex 60% drc	
	Kottayam RSS 4	Bangkok RSS 3	Kottayam	Kuala Lumpur	Kottayam	Kuala Lumpur
April	No Trading	10394	NT	8405	NT	7349
May	11573	10538	10592	8319	8023	7647
June	12013	11438	10584	8720	8511	8640
July	12683	11518	10766	8903	8128	8355
August	13219	13012	10965	9782	7870	8493
September	13415	14400	10918	10049	7733	8719
October	14223	16112	11598	11185	8985	10365
November	15617	16963	12358	11617	10726	11390
December	15842	17071	12959	11608	10572	10760
January	15188	15876	12610	11572	10871	10137
February	15604	16355	14110	12305	11489	10754
March	16659	16894	15013	12758	12754	12260
Yearly Average	14185	14214	12043	10435	9606	9572

The trends of monthly average prices of RSS 4 in domestic market and RSS 3 in international market during 2020 – 21 are shown in Graph 1.

Graph 1. Monthly average price of NR during 2020-21

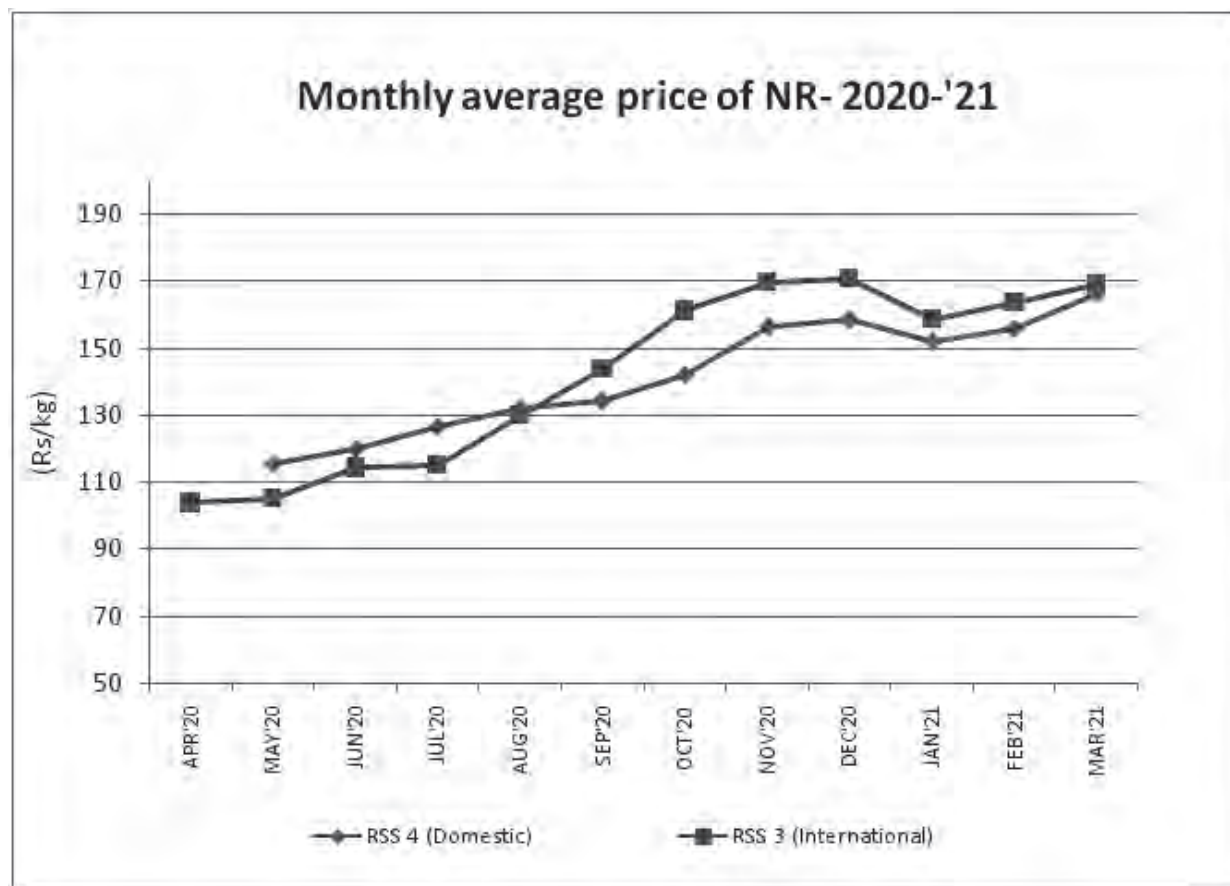


Table 2 summarizes key performance indicators of the Indian NR sector during 2020 -21 in comparison with 2019 - 20 and 2018 - 19.

Table 2. Performance of NR Sector in India

Year	Production		Consumption		Import (Tonne)	Export (Tonne)	Closing stock (Tonne)	Average price (₹ kg)	
	Quantity (Tonne)	Growth (%)	Quantity (Tonne)	Growth (%)				RSS 4 Kottayam	RSS 3 Bangkok
2018 -19	651000	- 6.2	12,11,940	9.0	582,351	4,551	308,860	125.95	108.83
2019 -20	712,000	9.4	11,34,120	- 6.4	457,223	12,872	331,091	135.22	116.01
2020 -21	715,000	0.4	10,96,410	- 3.3	410,478	11,343	348,816	141.85	142.14

The month-wise performance of domestic NR sector in India during 2019 - 20 and 2020 - 21 is furnished below in Table 3.

Table 3. Performance of NR sector during the year 2019 - 20 and 2020 - 21 (Tonne)

Month	Production		Consumption		Import		Export		Cl. stock	
	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21
April	32,000	15,000	96,500	5,000	32,983	24,211	827	746	278,000	337,500
May	41,000	26,000	100,120	52,000	33,669	38,324	309	414	250,000	342,000
June	50,000	41,000	98,000	84,460	39,980	18,039	890	273	240,000	313,000
July	60,000	52,000	95,000	96,000	50,940	27,850	507	214	254,000	297,000
August	57,000	59,000	92,500	94,000	57,821	36,883	313	103	274,000	299,000
September	68,000	63,000	85,000	103,450	42,550	38,498	920	379	296,000	297,000
October	65,000	75,000	89,000	107,000	44,397	35,324	2,558	574	302,000	300,000
November	78,000	87,000	97,000	104,000	36,907	32,178	339	3,785	307,000	311,000
December	90,000	96,000	100,500	114,000	30,523	38,963	2,047	1,969	312,000	330,000
January	86,000	92,000	102,000	113,000	30,994	40,150	1,811	1,669	310,000	348,000
February	53,000	63,000	102,500	107,000	31,368	35,237	1,139	635	280,000	339,000
March	32,000	46,000	76,000	116,500	25,091	44,821	1,212	582	331,091	348,816
Grand Total	712,000	715,000	11,34,120	10,96,410	4,57,223	410,478	12,872	11,343	331,091#	348,816#
Revised Projections for 2020-21		710,000		10,70,000		380,000		12,000		339,000
Growth %	9.4 %	0.4 %	-6.4 %	-3.3 %		-9.6 %		-10.8 %		

- including unprocessed form of rubber kept with growers, dealers & processors

Performance of Synthetic Rubber and Reclaimed Rubber Sector during 2020 - 21

Production

Synthetic Rubber (SR) production increased to 428,320 tonne during 2020-21 from 398,940 tonne during 2019-20, registering a growth of 7.4% as against a growth of 4.8% during 2019-20. During 2020-21, shares of styrene butadiene rubber and poly-butadiene rubber were 55.2% and 30% respectively, which were 62.7% and 32.6% during 2019-20. Reclaimed rubber (RR) production during 2020-21 was 141,180 tonne.

Consumption

SR consumption decreased to 618,000 tonne during 2020-21 registering a negative growth of 4.9% as against 649,610 tonne consumed during 2019-20. The Auto tyre sector consumed 429,295 tonne of SR during 2020-21 as against 427,774 tonne during 2019-20, recording a slight positive growth of 0.4% as against a negative growth of 8.6% registered during 2019-20. During 2020-21, the ratio of

consumption between NR and SR in India was 64:36. Consumption of RR during 2020-21 was 139,700 tonne. Consumption of Natural Rubber and Synthetic Rubber are summarized in Table 4.

Import of SR by rubber goods manufacturing industry during 2020-21 decreased to 312,438 tonne compared to 314,378 tonne during 2019-20.

Table 4. Consumption of NR and SR (Tonne)

Type of Rubber/ Sector	2020-21p	2019-20	Growth (%)
Natural Rubber			
Auto Tyres & Tubes	7,80,588	7,56,265	3.2
General Rubber Goods	3,15,822	3,77,855	-16.4
Total NR	10,96,410	11,34,120	-3.3
Synthetic Rubber			
Auto Tyres & Tubes	4,29,295	4,27,774	0.4
General Rubber Goods	1,88,705	2,21,836	-14.9
Total SR	6,18,000	6,49,610	-4.9
NR & SR			
Auto Tyres & Tubes	12,09,883	11,84,039	2.2
General Rubber Goods	5,04,527	5,99,691	-15.9
Total NR & SR	17,14,410	17,83,730	-3.9

p: provisional

World Natural Rubber Scenario in 2020

Production

According to the International Rubber Study Group (IRSG), world NR production during 2020 was 13.008 million tonne compared to 13.701 million tonne produced in 2019, registering a negative growth of 5.1%. During 2020, NR

production in main producing countries viz; Thailand, Indonesia, China, Malaysia and India decreased, whereas production in Vietnam and Cote d'Ivoire increased when compared to 2019. India was the sixth largest producer of NR in 2020 with a share of 5.3% of world production.

Table 5. Country-wise production of NR ('000 tonne)

Country	2020p	2019	% Growth
Thailand	4372	4851	-9.9
Indonesia	3037	3301	-8.0
Vietnam	1222	1185	3.1
Cote d' Ivoire	950	808	17.6
China	693	813	-14.8
India	685	702	-2.4
Malaysia	515	640	-19.5
Other Countries	1534	1401	9.5
World Total	13008	13701	-5.1

Source: Natural Rubber Statistics – June 2021 of Association of NR Producing Countries (ANRPC) for country-wise figures and Rubber Statistical Bulletin (April-June 2021) of International Rubber Study Group (IRSG) for world total.

Consumption

World NR consumption decreased to 12.71 million tonne in 2020 recording a negative growth of 6.8 %, compared to 13.64 million tonne in 2019. Consumption of NR in China, India, USA, Thailand, Japan, Indonesia, Brazil and Republic of Korea decreased during 2020 compared to previous year, whereas NR consumption in Malaysia increased. India continued its position

as the second largest consumer of NR by accounting for 8.2% of the global consumption during 2020.

World SR consumption decreased to 14.361 million tonne during 2020 from 15.158 million tonne during 2019, recording a negative growth of 5.3%. World NR and SR consumption ratio during 2020 was 47:53 which was same as in 2019.

**Table 6. Country-wise consumption of NR
(‘000 tonne)**

Country	2020p	2019	% Growth
China	5440	5497	-1.0
India	1040	1144	-9.1
U.S.A.	807	1003	-19.5
Thailand	764	800	-4.5
Japan	581	714	-18.6
Indonesia	574	625	-8.2
Malaysia	517	501	3.2
Brazil	345	402	-14.2
Rep. of Korea	298	354	-15.8
Other countries	2344	2600	-9.8
World Total	12710	13640	-6.8

Source: Rubber Statistical Bulletin (April-June 2021) of International Rubber Study Group (IRSG).

According to IRSG, the world supply-demand balance of NR showed an excess of 298,000 tonne during 2020

PART - II

CONSTITUTION AND FUNCTIONS

The Rubber Board was constituted by Government of India under the Rubber Act 1947 with the primary objective of overall development of rubber industry in the country. The Board established a strong development and extension network and as a result, the NR plantation sector achieved impressive growth over the years. Simultaneously, the Board took up research activities on rubber and established Rubber Research Institute of India (RRII) in 1955 for ensuring biological and technological improvement of NR in the country. Rubber Training Institute (RTI) established in 2000 acts as the link between research and extension activities for technology transfer.

The Rubber (Amendment) Act, 2009 notified in the Gazette on 22 January 2010 is the latest amendment to the Act.

The constitution of the Board as per Section 4(3) of the Act is as follows:

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;
- da) Three members to be nominated by the Central Govt., of whom two shall be from the Department of Commerce and one from the Department of Agriculture and Co-operation;
- e) Three members of Parliament, of whom two shall be elected by the Lok Sabha and one by the Rajya Sabha;

- ee) The Executive Director (ex-officio); and
- f) The Rubber Production Commissioner (ex-officio).

Since the tenure of the last Board was completed on 30 May 2020 and Board was not reconstituted by the Government of India so far, there was no Board in existence during the rest of the reporting year.

Section 8 of the Rubber Act 1947 lays down the functions of the Board as follows:

- (1) It shall be the duty of the Board to promote by such measures as it thinks fit the development of rubber industry
- (2) the measures referred to there in 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;
 - da) improving the quality of rubber and implementing the standards for quality, marking, labeling and packing for the rubber produced or processed in, imported into, or exported from India;
 - 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 Government on all matters relating to the development of

rubber industry, including the import and export of rubber;

- b) to advise the Central Government with regard to participation in any international conference or scheme relating to rubber;
- c) to submit to the Central Government and such other authorities as may be prescribed, annual report 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 Government from time to time.

Dr. Sawar Dhanania, served as the Chairman of the Board up to 30th May 2020. Subsequently, Dr. K.N. Raghavan, IRS, assumed charge of Chairman of the Rubber Board on 31st May 2020 in addition to his existing charge of Executive Director of the Board. Executive Director is the principal executive officer of the Board and exercises administrative control over all the departments, divisions and offices of the Board. Total number of officers and staff in the Board as on 31 March 2021 was 1168 consisting of 146 Group 'A' Officers, 506 Group 'B' Officers and 516 Group 'C' staff.

The organization chart of the Rubber Board as on 31 March 2021 is furnished as Chart – 1:

ORGANISATIONAL SET UP

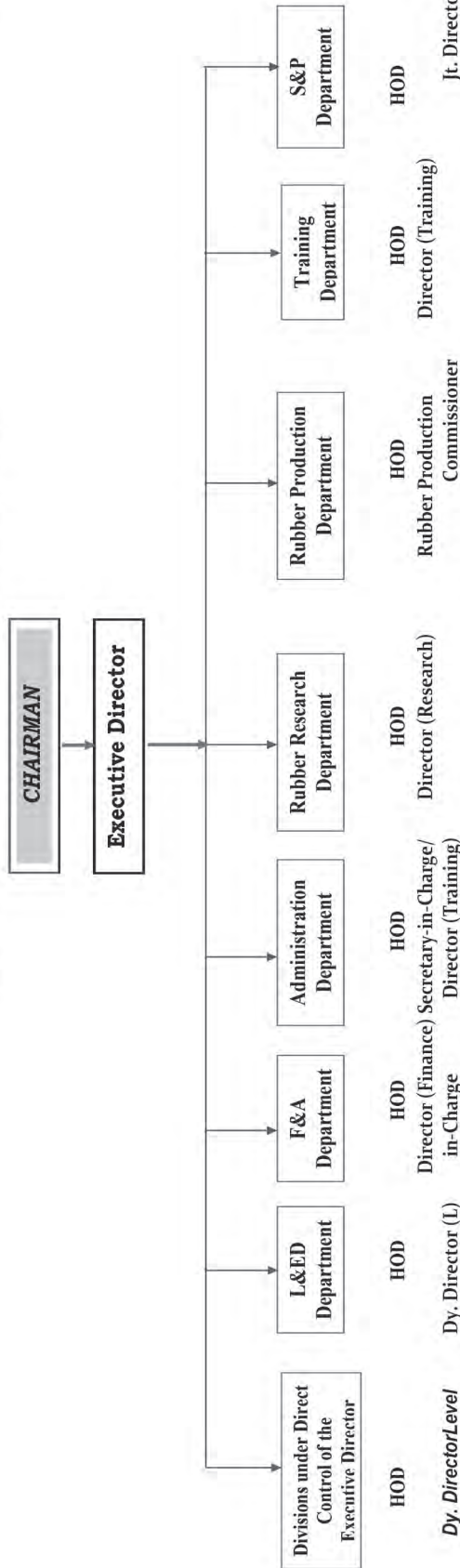
Activities of the Rubber Board are carried out through seven departments, namely Administration, Rubber Production, Rubber Research, Training, Finance & Accounts, Licensing & Excise Duty and Statistics & Planning headed respectively by Secretary, Rubber Production Commissioner, Director (Research), Director (Training), Director (Finance), Deputy Director (Licensing) and Joint Director (Statistics & Planning). Publicity & Public Relations, Internal Audit, Planning, Engineering & Processing, Market Promotion and Vigilance are Divisions which are functioning directly under Executive Director.

Headquarters of the Board along with the Departments of Administration, Rubber Production, Finance & Accounts, Licensing & Excise Duty and Statistics & Planning are located at Keezhukunnu, Kottayam-2. Rubber Research Department and Engineering & Processing and Market Promotion Divisions are located at Rubber Research Institute of India (RRII) campus near Puthupally, Kottayam-9 and the Department of Training is at Rubber Training Institute (RTI), adjacent to RRII campus.

PRESENT ORGANISATIONAL CHART - THE RUBBER BOARD

(Under Ministry of Commerce and Industry, Government of India)

CHART - 1



HOD	HOD	HOD	HOD	HOD	HOD	HOD	HOD	HOD
Dy. Director Level	Dy. Director (L)	Director (Finance) in-Charge	Secretary-in-Charge/ Director (Training)	Director (Research)	Rubber Production Commissioner	Director (Training)	Jt. Director (S&P)	
Major functions	Major functions	Major functions	Major functions	Major functions	Major functions	Major functions	Major functions	Major functions
Divisions Publicity & Public Relations Division Vigilance Division Internal Audit Division Planning Division Engineering & Processing Division Market Promotion Division	Licensing - Dealers - Processors - Manufacturers Cess/Arrears collection Revenue Intelligence	Centralized Depts. Accounts Funds Allocation & Management Cost Accounts	Board Secretariat Establishment (O & M, Personnel, Entitlement, and General Admn.) Labour/Welfare Section Hindi (OL) Section Legal Section EDP Division HO Canteen Security Services	Crop Improvement Crop Management Crop Physiology Crop Protection ACRT (Advanced Centre for Rubber Technology) Central Quality Control Lab Economic Research Central Experiment Station Regnl. Research stations NE Research complex Hevea Breeding Sub-Station Pilot Plants: PCRF/RVNRL Mobile Soil Testing Lab/ Satellite Lab/Regional Labs Statistics & EDP Instrumentation Library & Transport	Plantation Development - Planting activity - Productivity Enhancement - Planting Materials - Generation & Supply - Farmer Group formation (RFS/SHG) - Price Stabilization Fund - HRD programmes - Extension Activities Regions - Traditional - Non-Traditional (NT) - North East (NE) Region Major Office Set-up - Zonal Offices - Regional Offices - Dist. Devt. Centre - Tappers Training School - NRETC Block Plantation for Tribal Development in NE region	Nature of Training - Domestic - International Types of Training - Plantation Devt. - Industry Devt. - Extension Devt. - HR Development	NR Statistics - Sample Surveys - Census of Rubber Plantations NR Forecasting - - Production - Consumption - Imports & - Exports NR Price Statistics	

PART - III**ADMINISTRATION**

The Administration Department consists of the following Sections and Divisions:

1. Personnel and Administration Division
2. Service Matters Division
3. Labour Welfare Division
4. Legal Section
5. Hindi Section
6. Electronic Data Processing Division

1. PERSONNEL AND ADMINISTRATION DIVISION

Board Secretariat

Main activities of Board Secretariat include coordination for convening the meetings of the Board and its committees, preparation of notes on agenda and minutes of the said meetings, monitoring implementation of their decisions and compilation and printing of the Annual Report of the Board for placing before both the Houses of Parliament.

Constitution of the Rubber Board for the period 2017 – 20

Government of India constituted a new Board for the year 2017– 20 and notified in the Gazette No. S.O. 1745(E) dated 30 May 2017. The tenure of the present Board completed on 30 May 2020.

During the year 2020–2021, the 180th meeting of the Rubber Board was held virtually on 28 May 2020 and the meeting was presided over by Dr. Sawar Dhanania, Chairman of the Board. Sri. T.Rajendran Pillai has been continued as Vice Chairman until the completion of the tenure of the Board as he was re-elected in the 179th Board meeting held on 5th November 2019.

i) Personnel Section

As part of the austerity measures being implemented to rationalise the establishment expenditure without adversely affecting the services rendered by the Board, creation of new posts / fresh direct recruitments had been

suspended and no promotions were given against the retirement vacancies from February 2017. As directed by the Department of Commerce on Rationalization and Restructuring Plan of the Rubber Board vide F.No. 6/9/2017-Plant-C dated 11th November 2019, the Board was directed to downsize the present sanctioned staff strength from 1649 to 905 and to abolish 744 posts in a phased manner by 2022-23 treating the filled up posts as supernumerary posts and abolishing vacant posts immediately. The posts treated as supernumerary posts have to be abolished as and when they fall vacant. Ministry also directed the Board to devise a mechanism for optimum utilisation of staff. Accordingly, the Board commenced the restructuring exercise with the aim of downsizing the disproportionate large establishment structure and in the process of proposing a lean and efficient structure for the Board as per the present day functions and requirements.

Direction was there from the DoC that further recruitment of Technical/Scientific staff should be with specific approval of the Department for well-defined R&D projects. It was also directed that Promotions/Recruitment shall be made subject to prior permission of the Department of Commerce as per direction issued vide communication No.5/1004/2015-Plant (Coord) dated 22nd February 2017. The physical strength of staff as on 31/03/2021 is 1,168 against the sanctioned strength of 905.

As part of restructuring, seven Regional Soil Testing Laboratories functioning at Nedumangad, Adoor, Kanjirappally, Pala, Muvattupuzha, Thrissur and Kozhikode were wound up with effect from 14-08-2020 and handed over to trading companies sponsored by the Board (Proceedings No.1/20 dtd.14-08-2020 & Office Order No.1046 dtd.14-08-2020). Accordingly the Scientists and supporting staff were shifted to RRII and other stations for proper utilization. Four Office orders and Proceedings were issued regarding (1) granting upgradation under ACP/MACP, ignoring the past promotions / ACP

earned prior to 01/01/2006 due to merger of pay scales / upgrading post of Jr. Farm Officer / Accounts Officers as per the 6th CPC, (2) Partial modification of Office Orders regarding refixing the pay of Scientists who have been awarded FCS from 06-07-2006, (3) Partial modification of FCS for Scientists in Rubber Board, (4) Pay fixation in the case of direct appointment of in-service candidates to various other posts in Rubber Board.

By issuing Circular, action has been initiated to re-deploy the supernumerary posts against possible vacancies to arrive the sanctioned strength of 905 by March 2023 and also had meetings with Service Organizations in this regard. The Board prepared draft proposal for amending the Recruitment Rules of Scientists for implementing Modified Flexible Complementing Scheme (MFCS) as per DoP&T guidelines and submitted to the Ministry for approval and notification. Further, initiated the action to revise the existing recruitment rules of all other posts under different categories as directed by the Ministry.

Part Stage –II Audit for the ISO 9001-2015 certification of Rubber Board Head Office was conducted on remote mode on 19th and 20th November 2020 and ISO 9001:2015 was awarded. Comments / note prepared in connection with 6 court cases and furnished replies for CAG / Internal Audit queries. The Establishment Division compiled and furnished various information sought by the Department of Commerce (DoC) and other Departments. Credit points, for the period up to December 2020, of various categories of the Board were prepared and published in the Board's intranet. Dr. Umesh Chandra, Scientist A, who was technically resigned from the Board's service, has been permitted to rejoin as Scientist A with specific terms and conditions. Upon attaining the eligibility, Sri. Rinu Madhavan, Trainee on compassionate ground was appointed as Attender in regular scale.

Due to closing of Board's Guest House at Delhi, the post of Bearer was shifted to RR11 Canteen. Smt. Sudha P has been nominated as the First Appellate Authority and Transparency Officer under the RTI Act in the capacity of Director (Training). In order to clear the pending

12th plan RPD Scheme files, Field Officers and ministerial staff were deployed to Regional Offices in NE Region to inspect and process Plantation Development applications to release subsidy as an additional fund expected in the revised budget for 2020-21. A digitized file tracking system was introduced in the Board's offices in Kottayam.

The Board received 27 applications under the Right to Information Act, 2005 and disposed 23 applications with relevant information during the year under report.

ii) Entitlement Section

Advances

The Board disbursed ₹2.10 lakh to 5 employees of the Board towards Computer Advance. On completion of recovery of House Building Advance with interest, the original title deeds were returned to 27 employees, with re-conveyance deeds, wherever applicable. Besides, the Board sanctioned dress allowances to 141 eligible Group C employees.

Retirement Benefits

Retirement benefits were disbursed to 96 employees including 13 employees who retired voluntarily, 3 employees who died while in service and one employee who technically resigned. Additional benefits granted to 51 pensioners who attained the age of 80 and above. Family pension was granted to the families of 21 service pensioners who expired during the reporting year. Revision of pension and superannuation benefits consequent to re-fixation of pay were processed/ granted to 70 pensioners. During 2020-21, sanctioned leave encashment for 93 pensioners/family pensioners, death gratuity to three officials under NPS and verified transfer TA claims of 17 pensioners for further processing.

Files regarding resignation of four employees were processed / sanctioned and granted pro-rata retirement benefits to six employees, who technically resigned. Leave encashment granted to six employees who resigned, both technically and non-technically. During the year, 73 pension files were put up to Internal Audit division for service verification and forwarded the same to SM Division for rectification of objections. Processed 112 cases of retirement

on superannuation/VRS/death while in service and issued pension documents.

During the year under report, the Board issued 1221 newly designed Identity Cards to employees (with printed tag) and to pensioners (without tag), 70 mementos to those who retired and also, awarded confirmation to four employees, who have completed the probation period. Conducted typing test for employees in order to release their first increment and insured 206 officials in the NE Region under Personal Accident Insurance Scheme. Permission granted to 82 eligible employees to stay outside the limits of 8 kms from HQ and issued a Letter of authorization to an employee working in RI Squad.

iii) General Administration Section

This section is managing Board's General Administration, Maintenance Wing at HO, Stationery, Canteen, EPABX etc. This section has dealt with all the works connected with electricity, water, office vehicles, hiring of vehicles for field inspection/ campaign at ROs & Zonal Offices and official visits of officers, telephone, sanitary, wages of contingent sweepers/sanitary workers, housekeeping activities, rent, printing and stationery, tax, insurance, contingent items, fund requirement, AMC for electronic items, furniture, machines, photocopier machines, computer, rent renewal / shifting / merging of offices and execution of lease agreement of ROs, FSs & SOs and payment of rent, repairs and maintenance of vehicles at HO / ROs, renewal of insurance, tax, registration on time and works related to office furniture, quarters allotment, flag distribution, renewal of Post Box no., purchases through GeM portal, centralised inward and despatch of official letters and documents of all sections/divisions of HO, re-allotment of rooms to various Divisions, annual stock verification and disposal of unserviceable articles, activities under 'Swachh Bharath Mission' of all offices and preparing its periodic reports, security arrangements, etc. Celebrated Independence Day and Republic Day by hoisting National Flag. Arranged vehicles to various Government Departments and to District Administration for Election duty.

Based on the directions from the Govt. of India, air tickets for official purposes were booked

through approved agency, M/s. Balmer Lawrie & Co. and also directly from Air India. As part of restructuring of the Board, seven Regional Soil Testing Laboratories were closed and handed over to the Board promoted companies. Similarly, 19 Field Stations have been either closed or merged or shifted to the nearby office and also, closed the guest house attached to Sub Office New Delhi w.e.f. 20th December 2020. Three unserviceable and uneconomical vehicles have been disposed off and fetched around ₹ 1 lakh. .

The section arranged to procure 35 items worth of ₹46.06 lakh through GeM portal. Organized pledges, strictly observing COVID-19 protocols, in connection with Anti-terrorism Day, National Integration, Sadbhavana Diwas, Swachh Bharath, Quami Ekta Week , Rastriya Ekta Divas and Constitution Day. Collected fund for Flag Day and remitted to Zilla Sainik Welfare Office Kottayam and observed fund raising campaign on Communal Harmony. Organized meeting regarding the International Day of Persons with Disabilities observing COVID-19 protocols.

The Board spent ₹46.90 lakh towards various activities under Swachhata Action plan and arranged various activities during the Swachhata Pakhwada 2020 as directed by the Ministry. All out efforts were taken to contain the spread of COVID-19 pandemic by providing hand sanitizer, liquid hand wash, periodical disinfection of office buildings through external agencies as well as internal sources, etc. All directives in connection with COVID-19 restrictions from Government of India and State Governments have been implemented.

iv) APAR Section

APARs in respect of 1254 officers / staff of the Board including those on deputation during 2019-20 were collected and compiled. Updated the APAR register with all the relevant details and prepared the corresponding soft register, for the reporting year. Scrutinized the APARs and communicated adverse remarks, to the incumbents concerned. Copies of APARs 2019-20, completed in all respect, were issued to the employees as per schedule. List of employees require training based on the notings in the APARs was provided to the Training Department.

Provided copies of APARs of five consecutive years for processing deputation requests of officers and staff and APAR files of officers / staff to the Section concerned for considering financial upgradation under MACP Scheme.

2. SERVICE MATTERS (SM) DIVISION

The post of Dy. Secretary (SM), head of the Division, has been lying vacant. The activities of the Division were co-ordinated by the Dy. Secretary (P&A).

i) Service Matters (SM) Section

With the centralization of administrative functions at Head Office vide Order No. 3/23/2017/EST dt. 18.5.2017, Service Matters Division has been started under the direct control of Dy. Secretary (SM) to deal with all Service Matters of Employees of the Board. For the smooth functioning of the Department and to maintain all the Service Books / Personal Files of all employees of Rubber Board (except Research Department up to 17-10-2019). Vide Office Order No.1041 dated 18/10/2019 all the Service Books / Personal Files/ Leave account of all the officials functioning under the Research Department such as RRII, RRS, HBSS, Regional Labs and CES Chethackal have been shifted to the Division. Accordingly, all types of service matters of 1134 officials of the Board are dealt with. All Service Books / Personal Files / Leave Accounts are kept under safe custody. Service Books and leave account have been digitized and stored for safety purpose. Timely grant of annual increment, filling service details in APAR format, issue of various certificates, providing data for financial upgradation under MACP Scheme, etc. have been arranged.

ii) Career Progression (CP) Section

CP Section, functioning under the Service Matters Division, attended to the works related to Modified Assured Career Progression Scheme (MACP), Flexible Complementing Scheme (FCS) / Modified Flexible Complementing Scheme (MFCS) etc. and supported the Screening Committees for assessment/ interview, etc. besides processing grievances of employees on MACP, FCS / MFCS. Following activities were handled during the period:

- Issue of Experience Certificate & Salary

Certificate.

- Forwarding of applications for deputation to other organizations and outside job
- Permission to go abroad
- No Objection Certificate for applying for Passport, VISA and outside employment
- Deputation of employees to Rubber Board sponsored companies
- Maintain Service books, Personal file and leave account of the employees on deputation
- Transfer of posting of officials to Rubber Board sponsored companies
- Preparation of periodical statements

During the year, compiled required information for awarding financial upgradation under MACP Scheme to 338 eligible Group A, B & C officials (including 53 Scientists) for the period January 2019 to March 2021 for verifying service details. Vigilance clearance and APAR were collected and presented before Screening Committees. Officials of Accounts & Farm Categories who are eligible for MACP with effect from 01.01.2006 also were considered.

Requests/representations received from the service organizations/officials and also the communications from Internal Audit were processed and action taken. Supported EDP Division in connection with the computerization of works related to Career Progression Section by providing details of rules and copies of documents of all works of this Section. During the year, 35 officials are on deputation to 21 outside organizations. Of this, seven officials are deputed during 2020-21. Seventeen officials of Rubber Board have been deputed to Rubber Board promoted Companies. Applications received for 46 posts were forwarded to outside organizations with all required documents. Processed all cases for extension of deputation period. Maintained the Service Books of employees on deputation.

I. Overall manpower

Overall strength of officers and staff as on 31.03.2021 was 1168, as against the sanctioned strength of 905.

Table 7. Department/Division-wise and group-wise staff strength as on 31/03/2021

Name of the Department	Group A	Group B	Group C	Total
Administration	9	40	62	111
Rubber Production	43	313	241	597
Research	58	56	120	234
Finance & Accounts	6	43	22	71
Training	4	6	20	30
Statistics & Planning	4	9	5	18
Licensing & Excise Duty	11	21	19	51
Engineering & Processing	9	15	23	47
Market Promotion	2	3	4	9
Total	146	506	516	1168

II. Group-wise female employees**Table 8. Group-wise female employees as on 31 March 2021**

Group	Total staff strength	No. of female employees	Percentage to total
A	146	46	31.50
B	506	240	47.43
C	516	137	26.55
Total	1168	423	36.21

3. LABOUR WELFARE DIVISION

Section 8(2)(f) of the Rubber Act 1947 stipulates that the Board shall implement such measures as it thinks fit to secure better working conditions and provisions for the improvement of amenities and incentives for the rubber plantation workers. During the year 2020-21, the Board disbursed ₹ 298.46 lakh under various Labour Welfare schemes benefitting 16,353 rubber tappers/ plantation workers, as furnished below :

1. Educational stipend

Stipend is provided to children of rubber plantation workers for undergoing different courses of studies. The benefits include educational stipend and hostel / boarding fee to a maximum period of eight months in an academic year. During the year 2020-21, ₹ 65.22 lakh was disbursed to 1,355 beneficiaries.

Table 9. Educational assistance

Name of the Course	Annual Stipend	Hostel/Boarding fees
Class XI & XII	₹ 2,500	₹ 700
Degree Course	₹ 3,000	₹ 800
Post Graduate Course	₹ 3,500	₹ 800
Professional/Technical Courses		
Certificate Course	₹ 2,500	₹ 700
Diploma Course	₹ 4,000	₹ 800
Degree Course	₹ 8,000	₹ 900
Post Graduate Course	₹ 9,000	₹ 900
Ph D/ Post Doctoral Course	₹ 10,000	₹ 1,000

Table 10. Merit award for different academic streams

Name of Course	Minimum Marks/Grade	Maximum amount (₹)
SSLC or equivalent	60% or B Grade	2,000
Class XII or equivalent	60% or B Grade	2,500
Degree Courses	60% or B Grade	3,500
Post Graduate Courses	60% or B Grade	4,500
Professional/Technical Courses		
Certificate Courses	60% or B Grade	2,500
Diploma Courses	60% or B Grade	3,500
Degree Courses	60% or B Grade	6,000
Post Graduate Courses	60% or B Grade	7,000

2) Merit Award: There are two types of financial assistance.

i) Merit award for academic excellence

Financial assistance ranging from ₹ 2,000 to ₹7,000 was provided to children of rubber plantation workers who excelled in their studies.

During the year 2020–21, ₹9.54 lakh was disbursed as merit award to 393 beneficiaries.

ii) Cash award for exceptional achievements in sports/games and arts

Cash awards were given to children of rubber plantation workers, in the age group of 10 to 23 years and studying in Class V and above, for exceptional achievements in sports/games and arts.

Achievement in sports/games/arts	Quantum of award
1 st place at District School/ University level	₹ 4,000
2 nd place at District School/ University level	₹ 3,500
1 st place at State School/ University level	₹ 5,000
2 nd place at State School/ University level	₹ 4,500
1 st place at National School/ Universities	₹ 6,000
2 nd place at National School/ Universities	₹ 5,500

An amount of 0.40 lakh was disbursed to 6 beneficiaries as cash award for exceptional achievements in sports/games and arts.

3. Medical Attendance

The objective is to provide financial relief to tappers who undergo treatments for diseases. Expenses under allopathic/ayurvedic systems up to ₹ 5,000 per tapper per annum in the unorganized sector were reimbursed. Compensation was paid for absence from work due to illness upto a maximum of 15 days @ ₹ 100 per day from the said amount. In addition, expenses up to ₹ 30,000 were reimbursed for major diseases involving high expenditure, as one-time payment. An amount of ₹ 23.41 lakh was disbursed as medical assistance to 263 beneficiaries during the year 2020–21.

4. Housing Subsidy

Assistance is provided to workers / tappers in organized sector and tappers in unorganized sector, for construction of house on own land.

The Board disbursed ₹ 155.50 lakh to 532 beneficiaries during the year 2020–21. Details of housing subsidy for rubber plantation workers are given in Table 11.

5. Sanitary Subsidy for Rubber Plantation Workers in North Eastern Region

Financial assistance was provided to workers in small holdings and large holdings

Table 11. Housing subsidy for rubber plantation workers

Sl. No.	Category	Rate of Assistance (₹)
1.	Tapper in small holdings or tappers/ general worker/ non-supervisory worker /workers of factory in large holdings	30,000
2.	Workers in GPC / tappers in Tapper Bank under RPS	32,000
3.	Tappers belonging to SC/ ST category in small holdings and women tappers in small holdings	35,000
4.	Tappers in Northeastern (NE) region	30,000 / 35,000

of rubber plantations in North East (NE) region, for construction of sanitary facilities in their own land. The amount of subsidy is 75% of the cost of construction or Rs. 8,000 whichever is less. An amount of Rs. 1.82 lakh was disbursed to 23 beneficiaries during 2020 – 21.

6. Empowerment of Women Tappers

Financial assistance was provided to women tappers tapping in the unorganized sector of plantations and to the women workers working in Group Processing Centres (GPCs). Assistances were provided under two heads:

a) Assistance for marriage

Assistance was provided to woman tapper/ woman worker in GPC/woman tapper in tapper bank for her first marriage and for two daughters of woman tapper/ woman worker in GPC/woman tapper in tapper bank for their first marriage

b) Assistance in connection with confinement and delivery

This scheme provides assistance to woman tapper, woman worker in GPC for the expenses incurred in connection with the confinement and delivery on two occasions in her lifetime. The assistance under this scheme is Rs.7000 per delivery and is limited to first two deliveries in her lifetime. During 2020 – 21, Rs. 2.69 lakh was disbursed to 27 beneficiaries.

7. Group Life Insurance cum Terminal Benefit Scheme (GLITBS)

GLITBS was launched in collaboration with LIC of India in August 2011. The benefits included death cover (for both natural and accidents) and compensation for disabilities due to accidents and terminal benefit to members enrolled under the scheme. Each tapper has to contribute a minimum amount of ₹ 300 per annum and the Board in turn will contribute ₹ 600 per tapper per

Table 12. Quantum of assistance provided to woman for marriage

Sl.No.	Category	Amount (Rs)
1	Woman tapper/woman worker in GPC	10,000
2.	Daughter of woman tapper/woman worker in GPC/ woman tapper in tapper bank (Limited to two daughters)	10,000
3	Woman tapper in tapper bank	12,500
4	Daughter of widowed, divorced, single woman tapper	12,500

annum. From the total contribution, ₹ 214.50 will be paid as insurance premium and the balance amount will be invested for terminal benefit.

During the year 2020 – 21, an amount of ₹ 31.16 lakh was contributed for 5,194 tappers under GLITBS Phase I to IV and the insurance company paid compensation of ₹ 12.51 lakh as claim to 117 tappers.

8. Personal Accident Insurance Scheme (PAIS)

Personal Accident Insurance Scheme was introduced for tappers/workers in rubber plantations of unorganized sector with a coverage of ₹ 1 lakh. PAIS is managed by National Insurance Company (NIC). The premium amount of ₹ 18.88 (₹ 16+18% GST) per tapper was remitted by the Board, which amount to ₹ 1.09 lakh for 5,799 beneficiaries during the year 2020–21.

Table 13. Performance of labour welfare schemes during 2020 – 21

Name of sub component	Number of beneficiaries	Financial Assistance (₹ in lakh)
Educational stipend	1,355	65.22
Merit Award	393	9.54
Medical Attendance	263	23.41
Housing Subsidy	532	155.50
Sanitary Subsidy	23	1.82
Empowerment of Women Tappers	27	2.69
Insurance cum Terminal Deposit (Board's share)	5,194	31.16
Pension to Tappers (Board's share)	2,761	7.63
PAIS (NIC)	5,799	1.09
Exceptional Achievement	6	0.40
Total	16,353	298.46

4. LEGAL SECTION

Legal Section rendered legal advice and support for files referred from various departments of the Board and scrutinized draft documents like MOU, agreements, lease deeds, indemnity bonds etc. to be executed by the Board. Besides, the Section provided support to Ministry of Commerce & Industry in litigations / matters wherein Central Government was made party to the petitions. Detailed comments were given to the Standing Counsels and the Central Government Pleaders in all cases filed under various courts. Legal briefings were also given to counsels.

Legal Section also represented the Board before quasi judicial forums like labour court, consumer court and provided assistance in matters posted before district legal services authorities and Arbitrators. During the year under

report, disposed 35 cases and filed 28 new cases for litigation in various courts namely, Supreme Court, High Courts, Labour and Consumer courts. Further, scrutinized about 130 referred files and dealt appropriately.

5. HINDI SECTION

The Rubber Board is a notified office under Rule 10(4) of Official Languages Rule, 1976.

1. Official Language Implementation Committee (OLIC)

Four meetings (104th to 107th) of the Official Language Implementation Committee were held during the year 2020 – 21 and Executive Director of the Rubber Board presided over all the OLIC meetings. Annual programme issued by the Department of Official Language (DOL) was discussed and Quarterly Progress Reports were reviewed in these meetings. Agenda were

prepared in paperless manner as instructed by DOL and followed up the actionable decisions to ensure compliance.

Official Language Implementation Committees (OLICs) were formed in various subordinate offices and ensured their regular meetings. Quarterly Progress Reports regarding progressive use of official language were received from various sub-ordinate offices of the Board regularly and reviewed. Prepared consolidated QPRs and forwarded online to Regional Implementation Office, Kochi through on-line facility.

2. Town Official Language Implementation Committee (TOLIC)

Executive Director of the Board acts as Chairman of Kottayam TOLIC. Assistant Director (OL) of the Board serves as Member Secretary. Executive Director of the Board and Chairman of TOLIC presided over the two meetings (40th & 41st) of the Kottayam TOLIC convened through online mode due to increasing outbreak of COVID-19 pandemic.

Conducted one meeting of TOLIC Core Committee, one day Joint Hindi Workshop and Joint Hindi Week (from 23rd to 25th February 2021) celebrations for the officials of member organizations of the TOLIC during the year 2020 – 21 and the employees of the Rubber Board actively participated in the various competitions organized during the events.

3. Hindi Fortnight / Hindi Day Celebrations

Hindi Fortnight was celebrated from 14 to 30 September 2020 at Head Office, RRII and Rubber Training Institute of the Board. Conducted various competitions, observing Covid protocol of the Government, covering nine events in which around 150 employees of the Board participated. Hindi Day was celebrated in 30 subordinate offices of the Board. Various competitions were conducted for the employees of the Board and prizes / certificates distributed to the winners. Eminent personalities in the locality attended as guests and judges for evaluating the competitions.

4. Hindi Workshop / Translation Training Programmes

Conducted thirteen Hindi Workshops for

officials of the Board through on-line platform due to COVID-19 Pandemic and imparted training to 288 officials during 2020-21. Eighteen officials from Head office, RRII & RTI attended Joint Hindi Workshop organized by Kottayam TOLIC. A half day translation training programme conducted for officials of the Board on 27th October 2020 through online in association with Central Translation Bureau, Bangalore and about 50 officials from various subordinate offices of the Board were participated.

5. Rubber Samachar Bulletin / Rubber Statistical News

Published three issues of “Rubber Samachar”, Bi-monthly Hindi bulletin, through on-line during 2020–21. Write-ups of employees and their family members and other items such as prize winning essays of Hindi Fortnight Celebration, etc were featured. The scheme of honorarium was continued for contributing Hindi articles to “Rubber Samachar”. Besides, bilingual monthly “Rubber Statistical News” was also published through the Board’s website.

6. Other Activities

The Board encouraged officials to do original noting in Hindi by providing literature on “Noting and Drafting in Hindi” and 69 officials of the Board participated in the incentive scheme and received cash awards. The Board introduced a Hindi Session in the meetings of the Scheme Coordinating & Monitoring committee (SC&MC) to promote use of Hindi with a Hindi song and narration. Writing Aaj Ka Shabda at HO and subordinate offices was continued. Hindi Video CD library and CDs of famous Hindi classics were available for officials of the Board. Hindi journals “Vanitha” monthly & “India Today” weekly were subscribed for Head office, Rubber Training Institute, RRII and sub-ordinate offices of the Board with the aim to intensify the progressive use of Hindi in the Board’s offices.

7. General

As per Section 3(3) of the Official Language Act, documents such as office orders, circulars, memoranda etc. were translated into Hindi. Necessary guidelines were provided to officers regarding implementation of OL Policy. Translation, proof reading and printing of different forms in bilingual were undertaken. Provided

bilingual facility to computers and guidelines for doing work in Hindi using computers utilizing in-built Unicode facility. Updation of Board's Trilingual (Malayalam, Hindi & English) website is in progress. Translated Annual Report and Annual Accounts of the Board and various reports/ replies to questions for presenting to Parliamentary Committees/Ministry and continued trilingual EPABX welcome system and Trilingual price information system.

5. ELECTRONIC DATA PROCESSING DIVISION

Electronic Data Processing (EDP) Division functioning under the Administration Department takes care of all activities related to application of information and communication technologies (ICT). In addition, it undertakes data processing jobs such as GPF and pension contribution, payroll, processing of subscription to publications, in house file movement tracking, maintaining Intranet/ official e-mail services, ICT infrastructure, etc. The Division undertook the activities pertaining to "e- Governance" of the scheme component titled "Support for processing & marketing, infrastructure development and specialised services" of the Medium Term Framework Plan.

The activities of the EDP Division during 2020 – 21 are summarised as follows:-

1. Strengthening of Software Systems

Activities to strengthening of software systems come under the following categories:

Development of New Systems:

- *Microsite linked ERP solution:* Developed a comprehensive microsite linked ERP solution for Rubber Training Institute with Content Management System (CMS) for organising and managing training calendar, training enquiries, faculties, self-service portal for participants, training schedule management, data analytics, fee collection, accounting, SMS and email linked messaging, placement service, accommodation management, inventory of training materials, MIS reports and related activities. Successfully developed the solution and is in the launching stage.
- *'RUBAC', Mobile App for rubber area census:* Developed a web linked Mobile App named

'RUBAC' to collect the rubber area census in the country in digital mode for the statistical questionnaire based data collection across the country. The RUBAC app will be used by the census enumerators for the questionnaire based data capture from field with GPS coordinates of the plantations. The officers in RP Department and Statistics Department will use the integrated web app solution for census data compilation, enumerator management, data download, dashboards for instant reports and report section to generate MIS reports to analyse progress of the census. Role based user management is included in the solution.

- *Refinement of the integrated licensing application "Rubber Board Unified Business Information System" (RUBIS):* Solution refined for report generation from the returns filed by manufacturers, processors and dealers, NOC processing of importers, RCMC processing of exporters and licensing procedures upgraded as per the revised requirements of Statistics, Marketing and L&ED Divisions respectively.
- *End-to-End Digitisation:* EDP division customized the ServicePlus ERP platform of Ministry of Panchayat raj to on-board the DBT scheme 'Sustainable and Inclusive Development of Natural Rubber Sector' with scheme code ALA5Q of the Board. The subsidy applications and other service applications are Aadhaar linked for end-to-end digitization with direct payment through PFMS to the beneficiaries. The customization of the software completed and is ready to launch.

Service related to update of data in Government websites/ portals

- *Direct Benefit Transfer (DBT) of Funds:* Provided technical assistance in transfer of funds through DBT mode to 49,332 beneficiaries which amounted to ₹24.75 crore, and updated the details through web service. State-wise and district-wise granularity of data is updated in DBT Bharat Portal to compile and port the data to the PMO dashboard.
- *Rubber Production Incentive Scheme (RPIS) of Government of Kerala, 'ebt Kerala.gov.in',* for the marginal rubber growers of Kerala. Master data management/technical corrections and support management for

beneficiaries, RPS and Rubber Production officers are done through the EDP Division. The technical liaison between Government of Kerala and beneficiaries to avail the benefits of the scheme is also provided. Around 4.4 lakh growers have registered and processed the Bills amounting to around ₹ 1,750 crore through the system to the beneficiaries.

Service related to procurement/ tendering of works:

- Assisted various departments/ divisions of Board in floating the tenders related to purchase, sales, works and services through Central Public Procurement Portal (CPPP). Total of 137 tenders were floated in CPPP.
- Technical management of the procurement of items for various offices of Board through Government e-Marketplace (GeM); Managed 74 users in the portal and procured a total amount of ₹ 1.05 crore through GeM during the year 2020-21.

E-Service to stakeholders

- No Objection Certificate for the import of NR: Provided essential technical facilitation support for the processing of NOC for the import of NR through the application server 'http://www.rbegp.in'. Around 3643 NOC applications have been processed for the import of around ₹ 4.05 lakh tonne of NR.
- Registration-Cum-Membership Certificate (RCMC): Provided Software back end support in portal 'http://www.rbegp.in' for processing of RCMC for the export of NR. Seven RCMCs have been issued to NR exporters.
- Licence to Manufacturers/ dealers/ processors: Providing the web based solution with back-end technical support through the e-Governance portal of Board http://www.rbegp.in and http://rbegp.org.in which included;
 - Application processing, issue, renewal & cancellation of licence to manufacturers, dealers and processors. Around 10,600 related transactions were carried out.
 - Establishment updates, quantity amendments, validity extension, branch renewal, title and constitution changes, permission for amoniation, branch regularisation and

renewal, emergency issue of licence and related activities of manufacturers, dealers and processors.

- Special authorisation for procurement of NR for R&D purposes etc.
- E-filing of returns: Provided technical support to manufacturers, dealers, processors and estates for e-filing of returns through the e-Governance portal of Board www.rbegp.in and maintained the solution without breakdown. The returns filed through the portal includes;
 - o K and L monthly and K1 annual return of manufacturers.
 - o H2 and L monthly return of dealers
 - o H3 and L1 monthly return of processors
 - o H and L monthly and H1 annual return of Estates

e-filing and related report generation of around 4,200 manufacturers, 7,300 dealers, 100 processors and 330 estates were handled through the portal.

- *Subsidy application processing:* Solution with active support for the processing of pending subsidy bills of growers were done through the subsidy processing portal viz. 'Rubber Board Information System (RBIS)'. A total of 19741 bills were processed and an amount of around Rs. 9.32 crore disbursed to beneficiaries.
 - o Due to shifting of offices as the part of 'Restructuring of Board and rationalisation of establishment expenses', the subsidy records in the backend database were manually relocated in the server to maintain the files in the solution. Around 250 rearrangements were done in the server
- *Labour Welfare Management System:* The module handling Group Life Insurance cum Terminal Benefit (GLITB) Scheme of the web based Labour Management System managing the activities of the Labour Welfare Schemes of Board was upgraded.

Official website: Board maintains the following websites in English as well as vernacular languages and provided the back-end

support, maintenance and updation in these sites:

- www.rubberboard.gov.in, the official website and associated web service of the Board is hosted in the cloud of M/s NIC. About 600 updates relating to articles, news clipping, tenders, RTI returns, press releases, daily international and domestic price of NR, training calendar, etc. were disseminated to stakeholders for information.
- <http://clinic.rubberboard.org.in/>, Online Rubber Clinic website, which provides one stop service delivery site for pest and diseases control in rubber plantations, where the growers can upload disease images in assisted or self diagnosis modes along with related information and the images will be examined by the plant disease experts at Research Department of Board and the remedies will be sent to the rubber grower.
- <http://www.indiannaturalrubber.com>, the trade information portal, providing all trade information related to NR such as quality parameters of branded rubber, tracking facility to buyers to confirm the details of rubber certified by the Board, 'virtual trade fair' to promote exporters of branded NR, current market news and other news influencing natural rubber market, daily price update in domestic and international markets, information on various schemes operated by the Market Promotion Department, details of rubber wood companies, various trade policies related to NR, data relating to price of various grades of NR, export and import of NR, market rate of rubber wood etc., export promotion measures, event participation incentives and ministry communicated documents to exporters/importers and daily, weekly, monthly and yearly price of all grades of rubber which could be downloaded.
- <http://www.rubberscience.in>, the major international scientific journal in the field of rubber research with contributions from those who are actively engaged in R&D programmes in rubber and rubber products and extension of rubber cultivation in different parts of the world. The journal is published in three issues each in April, August and December every year.
- <http://rubsis.rubberboard.org.in/>, Rubber

Soil Information System (RubSIS) provides necessary technical support to maintain the GIS based soil fertility status and fertilizer recommendation system. Site hit analysis are done periodically to check efficacy of the system.

Mobile Apps: Board has launched the following mobile apps for supporting the growers. Software support for these apps are extended from the division

- Rubber Kisan App: for growers to know the daily rubber prices at national and international markets. It provides the list of agricultural practices to be followed on a monthly basis for each state. News and alerts issued by the Board as well the contact details of the offices of the Board with location are available.
- RubSIS App: This GIS enabled soil fertility status informer of 13 micronutrients in the soil assists the grower for finding the optimum mix and quantities of chemical fertilizers that a grower's holding requires.
- Rubber Trade Info, the Rubber Price Collection App, which helps in gathering market prices from a larger volume of buyers across various states so as to have better market reflection.

Software works related to in-house e-governance activities: Board has around 750 end-user equipment in various departments, divisions, sections, regional offices, research station, laboratories, nurseries and other offices. These installations include rack servers, network routers, switches, firewalls, instrument attached computers, desktops PCs, Laptops, load balanced WAN connectivity with in-house hosted servers etc., in addition to cloud based web server. The software of these systems are regularly updated and maintained so as to avoid breakdowns.

Intranet Portal: Maintains Board's Intranet portal, <http://info.rbegp.in>, an in-house designed, developed and managed solution with minimum investment to disseminate information to the employees of Rubber Board. The personal data of all the staff of Board are stored in the back end database. All the official information, Circulars and Office-Orders, Pay slips, receipt of claims, forms pertaining to filing of Income Tax returns, annual immovable property, Annual

Performance Assessment Report (APAR) etc., of all the staff are ported through site. Transfer request are also processed through the site with individual logins for each staff. Separate modules with individual login are provided for pensioners of Board.

GPF processing: The Pay bill and GPF processing of the staff of Board are carried out as one of the major activities of EDP Division.

Remote Management: The computer systems installed in the Rubber Production Department, Licensing Department and Research Department spread across the country are supported remotely from the Division. Around 220 remote services were done. In addition to remote assistance the division is providing nearly 2000 service supports to offices of the Board under e-governance.

Firewall fine-tuning: Hardening of Firewall from external threats and fine tuning are done on a regular basis to regulate Internet/ Intranet access in the offices. Periodic firmware updates of SOPHOS firewall and FORTINET firewall are done systematically to control the entire network. Two WAN (Internet) managed leased line (1:1) unlimited access connectivity from the service providers M/s BSNL @ 40 Mbps and M/s ASIANET for hosting of servers and internet access inside offices in HO. Similar setup is maintained at Research Department of Board (RRII), to handle the internet requirements in RRII campus and in hosting web servers from Research. These connections are operated in link load balancing mode. Periodic support is required to maintain Internet Leased Lines (ILL) connections, which is extended from the division.

2. Strengthening of Hardware Systems

The activities related to strengthening of Hardware Systems come under the main head 'Procurement Maintenance & Service'.

The hardware requirements for all the offices are looked after by the Division. There are nearly 750 computers throughout the offices of Board. Purchase of spares and replacements are taken care by the division. These systems have standalone as well as network printers attached to them. Scanners and such other gadgets attached to these systems are also procured by the division. The warranty/ AMC of these

systems are also looked after by the Division.

Procurement: Procured 150 new computer systems through 'Atmanirbhar Bharat' policy of Government of India and phased out equal number of old systems. Servers installed with "Rubber Board Unified Business Information System" (RUBIS) were replaced with more efficient new servers.

Installed Fibre Optic Solution (FTTH) in all the regional offices and other station offices replacing the existing lower bandwidth Broadband for Internet connectivity.

3. Other e-governance related activities

Server Management: The division manages Web/Application Servers, Database Servers, Active Directory Servers etc. with minimal external support on AMC.

Swacch Action

- Collected and consolidated the E-waste from all the offices of the Board and organized to dispose it as per the Government guidelines.

Bidding assistance

- Formulation of expression of interest and technical specification, evaluation and selection of bids for software solution projects/ hardware and software purchases/ AMC are done in the division. Bids of Microsite and ERP solution for Rubber Training Centre, Virtual Trade platform to facilitate the stakeholders to exhibit rubber and allied products through e-commerce had been prepared.

Network integration, development and support

- Upgraded the Internet bandwidth from 18 Mbps to 40 Mbps at Head Office and Rubber Research Institute to manage more traffic with greater efficiency.
- Installed virtual meetings solution to facilitate Video Conference requirements in the Board and provided active support for conducting all online meetings / seminars.
- Ported around 400 emails of Board from a private solution provider to the Government service provider, the National Informatics Centre (NIC).
- The network of routers, Layer III switches, Layer II switches and Wireless Access Point were managed internally to ensure proper connectivity at end user nodes.

PART – IV

RUBBER PRODUCTION

Introduction

The major service provided by Rubber Production (RP) Department is technology transfer to cater the needs of nearly 1.32 Million rubber growers in Indian natural rubber sector. RP Department is also responsible for planning, formulation and implementation of various Extension and Development activities and programmes for the sustainable development of Indian Rubber plantation industry. The deliverance of all services of the Board to farmers and implementation of almost all schemes is through the RP Department which operates at grass root level and renders free advisory and extension services to rubber growers on all aspects of rubber cultivation, production, processing and marketing.

The extension network comprises 3 Zonal Offices, 45 Regional Offices, 3 Development Offices, 1 ADO Office and 134 Field Stations located at all rubber growing centres. The field services are rendered through Zonal/Regional Offices and Field Stations. Other establishments are nurseries, demonstration and training centres and Tappers Skill Development Schools (TSS).

Mission

- Sustainability of rubber plantation sector by promoting adoption of Good Agricultural Practices (GAPs) and cost effective agricultural practices for viable rubber production.
- Expansion of cultivation and identification of agro climatically suitable areas fit for economic rubber production and extension of cultivation to such areas.
- Transformation of senile and unproductive holdings to productive plantations through replanting with advanced planting materials of location specific high yielding clones.
- Quality improvement of primary produce to cater to the domestic industrial demands.
- Cluster development and empowerment of stakeholders for competitive advantage.

- Socio - economic development of SC/ST and other vulnerable groups.

Important developmental/extension activities undertaken

- Rubber Plantation Development Scheme.
- Production and distribution of advanced planting materials.
- Advisory and extension services to growers.
- Demonstration of scientific planting and GAPs.
- Identification of suitable areas and promotion of new planting.
- Productivity enhancement in smallholdings
- Quality improvement of primary produce.
- Extra income generation from rubber plantations like intercropping, apiculture etc.
- Block planting, group planting etc. for the socio-economic uplift of vulnerable sections of the society.
- Facilitating formation and empowerment of farmer associations, viz., Rubber Producers' Societies (RPSs), Self-Help groups (SHGs), Rubber Tappers Bank (RTB), Labour Groups (LGs) etc.
- Capacity development of stakeholders like growers, tappers etc.
- Women empowerment
- Convergence initiatives with central and state level agencies.

Corona virus disease 2019 (COVID-19 Pandemic) and Natural Rubber Plantation sector

The corona virus disease (COVID-19) pandemic, which originated in the city of Wuhan, China, had quickly spread all over the world. The world of work had been profoundly affected by the global virus pandemic. In addition to the threat to

public health, the economic and social disruption threatens the long-term livelihood and wellbeing of millions. The hectic effects of the COVID-19 pandemic had affected almost all walks of life. With limited medical solutions, lockdown, social distancing, testing and quarantining had been the standard practice to control the rapid spread of the disease. Government of India ordered a nationwide lockdown for 21 days further extended to 30th June 2020 as a preventive measure of the pandemic in India. Activities resumed in a phased manner termed as "Unlock 1.0" to "Unlock 7" (June to December 2020). The pandemic is still continuing, and it is not clear as to what would be the future direction and depth of the outbreak.

The plantation sector is crucial to the livelihood of marginalised and vulnerable sections of the population. The pandemic and followed lockdown had affected all the sectors. The Standard Operating Procedures (SOPs) issued by the Government in the context of COVID-19 imposed economic shocks on the plantation sector, mainly through the channels such as disruptions or delay in agricultural seasonal activities; timely supplies of factors, resources/inputs; processing, storage, transportation; marketing etc. However, the extension support system had played its part to minimise the impact of the COVID-19 and lockdown. The public and private extension players had made several attempts to deliver farmers from the brunt of the lockdown. The deliverance of extension and development activities of Rubber Board was also focused on minimizing the impact of the pandemic by supporting stakeholders through several interventions.

Activities undertaken during the year 2020 – 21

The activities undertaken during the reporting year in Traditional & Non Traditional (NT) regions and Northeastern (NE) region with financial support under MTEF Scheme and without financial support are categorized under separate heads are described hereunder.

Support under Medium Term Expenditure Framework (MTEF) Scheme

The schemes under the MTEF entitled "Sustainable and inclusive development of natural rubber sector", is basically the

continuation of 12th Plan Scheme with modifications in components/subcomponents. 'Rubber Plantation Development & Extension' is one of the major components of the MTEF scheme.

Gist of Major component–1 Rubber Plantation Development & Extension (RPD&E)

Objectives

- To increase NR production through productivity enhancement of existing plantations.
- Increase NR production by expansion of planted area in traditional as well as in selected suitable areas of Non-Traditional (NT) region and North East (NE) region and replanting of senile plantations having low productivity.
- To optimize resources for maximization of net returns of rubber growers with focus on environmental sustainability through farmer cluster formation under RPSs, SHGs and RPS companies and to increase global competitiveness with production of quality rubber in line with consumer requirements.

Specialties of MTEF Scheme

- Main beneficiaries of the scheme are smallholders in NR sector. (Planting subsidy is limited to 1 ha for growers owning total 2 ha land in traditional region and in NT / NE regions, planting subsidy is limited to 2 ha for growers owning up to 5 ha).
- Specific interventions in favour of SC, ST and other vulnerable groups.
- Gender balance components specifically directed at women welfare.
- Special interventions in NT/NE region and other backward areas.

Sub components under Rubber Plantation Development & Extension

Two sub components of the Rubber Plantation Development & Extension are:

- Sub component–1 : Rubber Plantation Development & Extension in Traditional & Non Traditional Area other than North East (RPDETNT)
- Sub component–2 : Rubber Plantation Development & Extension in North East (RPDENE)

Scheme Subcomponents

- Plantation Development with Planting subsidy including committed payments
- Quality Planting Material Generation
- Productivity Enhancement
- Advisory & Extension Services
- Farmer Skill Upgradation & Group Empowerment
- Model Extension Centres
- Women Empowerment
- Farm mechanization
- Assistance for contract farming

I. Rubber Plantation Development & Extension in Traditional & Non Traditional Area (other than North East) – RPDETNT**1.0.0 Operational areas of rubber plantations*****(i) Traditional Area: -***

Rubber cultivation has been traditionally done in the hinterlands of the South West Coast comprising Kerala and the adjoining Kanyakumari District of Tamil Nadu. There is tremendous scope for further improving production through systematic replanting and productivity enhancement in these regions.

(ii) Non-Traditional Areas (NT) other than North East:-

Hinterlands of coastal Karnataka, Goa, Konkan region of Maharashtra, coastal Andhra Pradesh, Odisha, Chhattisgarh, Jharkhand, Andaman & Nicobar Islands, and West Bengal are identified as potential areas for rubber cultivation in the country. None of these areas can be considered ideally suitable in terms of agro climatic conditions for rubber cultivation as compared to the traditional belt.

1.1.1 Plantation Development

Rubber Production Department has been taking efforts to expand rubber cultivation in traditional and non-traditional areas as well as replanting of old and senile plantations as long term production enhancement measures. Rubber Board is promoting planting activity by providing technical guidance and financial support as planting grant. New applications for planting subsidy were not invited during 2020-21 due to paucity of funds. The department promoted planting through extension activities. A comprehensive survey was conducted to ascertain area planted during 2020-21 and data on area assessed are tabulated in Table 14.

Table 14. Planting Activity during 2020-21

Activity	Planted area (Ha)	
	Traditional	Non Traditional
Re planting	5950	40
New planting	0	75
Total	5950	115

1.1.2 Tribal and SC Plantation - Maintenance of existing units

The Board has been successfully implementing a scheme for tribal development through rubber planting with the financial support of the State Governments. Centre for Development Studies, Thiruvananthapuram which had conducted an impact assessment of this component observed that the AKTDRP (All Kerala Tribal Development Rubber Plantation) Project emerged to be a worthwhile contributor in reducing the poverty of the tribal participants. These types of projects were being successfully implemented in other states like Karnataka, Odisha and Andhra Pradesh also. New tribal development projects had been taken up in Odisha and Andhra Pradesh during 12th plan period.

The objective of this activity is to raise plantations by the tribal beneficiaries themselves as a cluster, get employed in the plantations and harvest and group processing their produce and market it through RPSs formed by them. The area on a cluster / block was developed by providing all inputs, scientifically planted with the labour input by the beneficiaries, efficiently managed under Board's guidance and supervision till the plantation is ready for harvesting. The programme is a collaborative project by the Rubber Board, respective State Governments and the tribal

beneficiaries with 40% contribution from the Board, 50% from concerned State Government and 10% as beneficiary contribution by way of labour.

Provisions were not included under MTEF Scheme for undertaking fresh projects. However, fund is provided for maintenance of plantations established during the previous plan periods in all the states. The existing immature plantations were maintained scientifically with financial support from the concerned state governments. Achievements under this component are given Table 15.

Table 15. Tribal projects maintained during 2020-21

State	Area (ha)	No. of beneficiaries
Kerala (ST)	66.98	194
Odisha (ST)	382.54	469
Total	449.52	663

1.1.3 Pathanamthitta Tribal plantation project

This is a collaborative project with 90% contribution from Tribal Development Department and 10% as beneficiary contribution by way of labour and Rubber Board as implementing agency. The project is aimed at rubber plantation development in 10 ha (25 Acres) under the possession of ST households in Ranni & Konni blocks of Pathanamthitta District of Kerala State. Kerala Tribal Development Department shall meet 90 % the plantation development cost per ha towards the cost of planting materials, fertilizer, plant protection chemicals, boundary protection materials, cover crop seeds, tools and equipments, labour cost etc. The department shall also meet the expenditure towards project implementation. Planting was carried out in an area of 6.68 ha during 2020-21.

1.2. Quality planting material generation

1.2.1 Generation of planting materials

The Rubber Board is maintaining one Central Nursery and five Regional Rubber Nurseries in the traditional area for generating good quality planting materials and serving as the source of genuine bud wood material required by private

nurseries. Quality of the planting material is the prime factor influencing production and productivity of rubber plantations. Major share of the planting material requirement is met from private sources at present. Even though the Board is in a position to meet only around 10% of the total planting material requirement in the country, it is very much necessary to maintain the nurseries in order to ensure quality control and check the possibility of unscrupulous trading practices in private nursery sector. The details of planting materials generated during 2020-21 is given in Table 16.

Table 16. Planting material generation in Board's Nurseries

Type of Planting Material	2020-21 (P)
	No. of Planting material
Brown Budded Stumps	9415
Poly bag plants	4246
Root Trainer Plants	259870
Total	273531

1.2.2 Registration of nurseries and certification of planting materials in private sector

Subsequent to the suspension of approval for private rubber nurseries in 1986, planting material generation and trading became a profit oriented business without much attention on quality. There have been widespread concerns on supply of spurious planting materials by private rubber nurseries. An optional scheme for registration of private nurseries and certification of planting materials was introduced in September 2016 to ensure quality based on Good Nursery Practices (GNPs), formulated by the Board. As per the scheme, 15 private rubber nurseries were registered and received ₹ 1.48 lakh towards certification fees.

1.3 Productivity Enhancement Comprehensive Agro-management programme

There is ample scope for improving productivity of rubber in the small holding sector because, the realized productivity is much lower than the potential productivity of more than 3500 kg per ha. Gap in adoption of Good Agricultural

Practices is identified as the major reason for low productivity.

1.3.1 Total Plantation Excellence (TPE)

The concept of Total Plantation Excellence (TPE) aims at sustainability of small holdings through discriminatory adoption of agro management practices for productivity enhancement suited for a particular unit. Short term productivity enhancement measures are recommended for increasing production from existing plantations. When productivity enhances, cost of production declines and increases growers' net farm income. The production-consumption gap could be narrowed by enhancing production through the adoption of short term productivity enhancement measures.

The small farmers are normally reluctant to introduce any change in the routine agro practices until they are convinced about the benefits of GAPs. This is a major bottleneck to the introduction of GAPs to the small holdings. Setting up of demonstration plots under the supervision of extension network is a main activity under this component. Rainguarding (RG), disease control measures (DCM), discriminative fertilizer application (DFA), soil moisture conservation (SMC), correction of tapping defects, Controlled Upward Tapping (CUT) etc are the GAPs demonstrated. A special scheme under this component was implemented for supporting small growers for rainguarding their holdings in the backdrop of financial crisis due to COVID -19 lock down.

1.3.2. Special scheme for rainguarding

The first phase of lockdown for 21 days from 24th March 2020 imposed movement restrictions on people, and closing of almost all establishments. Later, from 15th April 2020 onwards, all the plantation sector, including tea, coffee, rubber and spices, were given conditional exemptions, to operate at 50% of workforce for activities such as farming, processing, packaging, sales and marketing of the plantation crops. In case of rubber, April/May is the time to do rainguarding before the monsoon showers. Financial crisis due to income loss from rubber and restrictions in engaging labour on account of lock down restrictions were the major constraints in rainguarding which is the pivotal productivity determinant agri-practice. In order to boost up

NR production, Rubber Board launched a special scheme to support the needy small and marginal rubber growers for rainguarding. Companies in RPS sector procured rainguarding materials like polythene sheets/shade and adhesive in bulk and distributed among small growers to promote rainguarding. Board provided financial assistance @ Rs.1550 per ha (nearly 15% of the total expenditure) for general category and @Rs.2250 per ha (nearly 22% of the total expenditure) for ST/SC growers. The service of labour groups/Rubber Tappers Banks was also utilized for fixing the rain guards.

Under the scheme, rainguarding was done in an area of 8011.7 ha in the service areas of 32 regional offices with the active participation of 845 RPSs in other than NE region and 39 ha in the service areas of 5 regional offices in association with 10 RPS in NE region (Agartala Zone). A total of 12400 growers were benefitted out of the scheme by rainguarding 3220000 trees owned by them. The additional NR production is estimated to be 4800 MT and the revenue generation is Rs.68.5 crore against ₹ 1.20 crore paid towards the assistance to the beneficiaries under the scheme. Further the scheme helped in generating rural employment to the tune of ₹ 2 lakh man days.

1.3.3. Critical input supply

The procurement and distribution of inputs by Rubber Board has been discontinued in the backdrop of paucity of funds. However the companies in RPS sector promoted jointly by the Rubber Board and Rubber Producers Societies were prompted to distribute inputs for rainguarding and spraying at competitive rates to the needy growers.

1.3.4. Credit from Primary Co operatives and Rubber Board companies

The Rubber Board, in backdrop of COVID 19, chalked out a scheme to extend

financial support to growers for rainguarding, which is very crucial for enhancing

production. Board took a lead role to make available short-term loans with interest free/nominal interest from Banks, especially in the Co-operative sector. The Rubber Board companies also offered credit facility to growers by supplying rain-guarding materials at credit

which will be adjusted later against the cost of latex/sheet.

1.3.5. Special scheme for tackling the outbreak of Colletotrichum Circular Leaf Spot (CCLS) disease

Symptoms of Colletotrichum Circular Leaf Spot (CCLS) disease and leaf fall due to the same was reported in traditional rubber growing areas from the year 2017 onwards. In 2019-20, the disease was observed in the plantations in Central Kerala. In 2020, the spread of the disease increased, but in a limited scale as per the preliminary reports. Colletotrichum Circular Leaf Spot (CCLS) disease is prominent during the rainy season as well as high humid months (April – November). Severe outbreaks of these diseases make the trees bare of leaves or with unhealthy foliage and retarded growth, thus prolonging the immaturity period. Epidemic and repeated occurrence of these diseases cause severe yield loss in mature plantations. Since it is an airborne plant disease, it has the potential to spread rapidly in the near future, if left unmitigated. Therefore, control or suppression of disease in their peak severity period is very essential to maintain the health of the plantations in subsequent seasons. The CCLS as well as ALF disease can be effectively controlled by prophylactic spraying of oil based copper oxychloride (COC). A special scheme has been formulated for spraying in 1000 ha infected with CCLSD with an outlay of ₹ 1.00 crore. All the preparatory works have been completed for implementing the scheme during April/May 2021.

1.4.0 Cluster Development and Capacitating Market Linkage through RPS/SHG

Globalization has resulted in aggravated competition for domestic NR sector in international markets. In order to become competitive in the global as well as domestic markets, development of agro-based farmer clusters, which is considered to be potential drivers of competitiveness, has to be promoted.

1.4.1 Formation and strengthening of Rubber Producers Societies (RPSs)

Indian rubber plantation sector is dominated by smallholdings, which account for almost 91% of area and 92% of production. The preponderance of small and marginal growers

makes the sector vulnerable to exploitation by middlemen, fluctuations in price and difficulties in gaining access to technology and information. To overcome these issues and strengthen the sector, the Board promoted a group management system by encouraging formation of RPSs since 1985. RPS, the voluntary association of small growers of 50-200 rubber growers residing in a small compact area within a radius of 2 to 3 km, registered under the Charitable Societies Act is envisaged to function as a non-profit making institution imparting technical and scientific knowhow to members for general improvement of the area and economic and social welfare of the small growers of rubber. Three new RPSs were formed during 2020-21.

1.4.2. Withdrawal of approval issued to defunct RPSs

The success of RPSs to a large extent depends on active participation of members and commitment/leadership qualities of the executive committee members. In the case of some RPSs, the goals envisaged by Rubber Board could not be accomplished and the organizations become defunct beyond the scope of rejuvenation in spite of repeated interventions. Since there is no meaning in keeping such societies in the approved list, the Rubber Board has decided to withdraw the approval issued to such RPSs in ONE region. Accordingly, approval of 336 RPSs has been withdrawn during 2020-21 reducing the number of RPSs to 2154.

1.4.3. Clusters under the patronage of RPS

1.4.3.1. Self Help Groups (SHG)

Rubber Board has been promoting formation of Self Help Groups (SHG) under RPSs as activity groups of marginal and resource poor farmers and women for tackling issues related to shortage of skilled human resources through capacity building, livelihood improvement by opening up of employment opportunities to members and ancillary income generation in rubber plantation sector. Some of the activities undertaken by SHGs are rainguarding, tapping, processing, plant protection, rubber sheet grading, packing, collection of field coagulum, furniture making, soil sampling, apiculture etc. 3 new SHGs were formed during the year 2020-21.

1.4.3.2. Rubber Tappers Bank (RTB)

One of the serious problems faced by the rubber sector is the shortage of skilled tappers. Rubber Board has been highly concerned about the shortage of labour and it has initiated several innovative programmes and strategies to immediately overcome the crisis. Percentage of skilled tappers remaining in the job is coming down steadily due to lack of recognition, attractive remuneration, job security and insufficient number of working days per year. Formation of RTB under the patronage of RPS to ensure supply of tappers/skilled labourers to the industry is a recent institutional innovation for tackling labour shortage in the sector. The objective of the RTB is to generate a pool (bank) of rubber tappers based on individual tapper registrations at the RPS. RTB is a forum of 10-30 skilled tappers, envisaged as a SHG functioning under the auspices of RPS. Tappers registered in the RTBs are provided free training in all aspects of operations in rubber plantations. The initiatives by the Board towards launching RTB have been reported to be making some positive impact in locations reeling under tapper shortage. 28 RTBs were formed during 2020-21.

1.4.3.3. Labour Groups

Labour Group is a pool of 10- 15 skilled labourers scientifically trained in adoption of GAPs. Rainguarding and other GAPs in the holdings of growers are carried out under the direct supervision of RPS. During 2020-21, 10 new Labour Groups with a total membership of 77 were formed. New RPS/SHG/RTB was supported financially under MTEF Scheme. The assistance given under the Scheme is given in Table 17.

Table 17. Assistance sanctioned under MTEF Scheme

Scheme	Total	
	No. of Cases	Amount sanctioned (₹)
RPS Formation (ONE region)	2	4968.00
RTB Formation	38	131656

1.4.3.4. Empowerment of Farmer clusters-RPS

RPS requires approval from the Rubber Board for participation in the schemes and programmes being implemented by the Board. The RPS approved by the Rubber Board should function in accordance with the guidance and regulations issued by the Board from time to time. Rubber Board nominates the local Extension Officer to the Board of Directors of the RPS as facilitator.

(a) Conduct of statutory meetings

As per the bye law of the society, Board of Directors (BOD) should meet once in a month. If the situation warrants, more meetings can be held. Annual General Body (AGB) should be convened within 3 months after the completion of the financial year to review the performance in the previous year and chalk out future action plan. Quarterly General Body (QGB) should be convened to appraise the performance and further programming of future plans. Special General Body is convened when 1/3rd of the members demands in writing or by joint decision of the 3 executive members to consider exigent matters. Details of meetings conducted are given in Table 18.

Table 18. Statutory meetings

Type of meeting	No. of events	No. of Participants
AGB meetings	1057	27139
QGB meetings	63	1442
BOD meetings	3149	17830
Special GB	29	604

(b) Renewal of registration

Auditing of accounts on completion of financial year, preparation of annual performance report for approval of Annual General Body is the statutory requirement as per the byelaw. Submission of audited accounts and annual performance report duly approved by the Annual General Body to the District Registrar in time is mandatory for renewal of registration. Registration was renewed by 1145 RPSs during 2020-21.

1.4.3.5. RPS based Group activities

(i) Collective procurement (Input depots)

Many RPS had established input depots/centres for supplying estate inputs to small growers at a reasonable rate. Various estate inputs thus distributed include rainguarding / spraying materials, tapping accessories, formic acid, coagulation pans, sieves, copper sulphate, fertilizer, etc. Availability of estate inputs at the doorsteps of small growers will facilitate better adoption of GAPs. Many RPSs have established input distribution/ collection centres in remote villages where small rubber growers are concentrated. Rent of building/room leased out by RPS for this purpose is a recurring expenditure to be borne by them. Rent of input depots is subsidized under MTEF Scheme. The scheme was implemented during 2020-21 and a total amount of ₹ 1332794/- being the subsidy for rent paid for input depot/centre was sanctioned to 207 RPSs.

(ii) Infrastructure Support for decent-ralized sheet processing (Rubber Roller & Smoke House)

Growers who are residing in scattered and remote villages in NT region are not benefited from community processing as it is difficult to bring their crop to the GPCs for processing. These growers often follow unscientific rubber processing practices leading to heterogeneous quality of RSS. Assistance was included under MTEF Scheme for incentivizing infrastructure development for processing (acquiring rubber sheeting rollers and smoke house).

(iii) Support for SC growers for installing rubber sheeting rollers

Assistance at a higher rate for purchase of rubber rollers is provided to SC growers in traditional/non-traditional areas.

Table 19. Details of assistance sanctioned

Scheme	No of beneficiaries	Amount sanctioned (₹)
Roller subsidy	64	960000
Smoke house subsidy	21	315000
Roller subsidy (SC)	1	24000

1.5. Extension and Advisory services

Small growers are vulnerable to weather related disasters, market fluctuations, and disease outbreak. Extension and advisory services (EAS) provide an opportunity for strengthening the resilience of rural and farming households by increasing their access to tangible and intangible resources such as inputs and knowledge. More generally, extension and advisory services play a critical role in promoting agricultural and rural development and improving the resilience of the sector as a whole.

1.5.1 Annual Mass Contact Programme (AMC)

Campaigns help to create a widespread awareness of the subject matter dealt with and quick extensive adoption of the innovations sought to be popularized. Annual campaign meetings are organized in association with RPSs and held simultaneously in scores of centres every day, continuously for a specific period for creating awareness among large group of growers on a theme of topical importance.

Campaign 2020- Self Tapping for viable rubber production

Rubber has lost its sheen due to continuous price declines. On the other side, the cost of production is showing an increasing trend. Poor cost-realisation had set several marginal farmers to abandon tapping of rubber trees regularly. About 30 per cent of rubber estates, mostly small holdings, are lying untapped as commercial operations became unviable for owners due to a steep fall in the price of the commodity over the past few years. Tapping wages constitute a major component of cost of production of natural rubber (more than 60%). Therefore, it is required to popularise suitable tapping systems and methods to optimize the production and involve family labour so that the income could cover the cost of production in a win-win situation.

The campaign comprised of two main phases, viz awareness creation and capacity building which were implemented in a phased manner. Awareness campaign meetings were conducted under the auspices of Rubber Producers Societies at various centres followed by on-farm training in tapping, processing and Good Agricultural Practices for needy growers. In the wake of COVID 19 restrictions, some of the awareness programmes were conducted in online mode using various social media platforms. The target was to host 2000 events with a participation of 40000 growers.

Table 20. Campaign 2020

Type of programme	Online programmes		On farm programmes		Total	
	No. of events	No. of participants	No. of events	No. of participants	No. of events	No. of participants
Awareness meetings	367	6373	1573	34632	1940	41005
Capacity building programmes					349	4234



Campaign meeting to promote self tapping

Honouring of best performing self tapping owners

As the part of Campaign 2020, Rubber Board had introduced a programme for honouring best performing self tapping owners at the rate of one grower per Extension Officer which will be an inspiration to the other small growers for undertaking self-tapping in their holdings. Being the token of acknowledgement, a citation and a tapping kit were issued to 112 self-tapping growers across the traditional region. Annual mass contact programme 2020 entitled 'Self Tapping for Viable Rubber Production' was aimed at promoting self tapping and harnessing family labour in harvesting and processing for making rubber cultivation a sustainable enterprise. The twin objectives of the programme were to create awareness on the advantages of utilizing family labour and capacity building in tapping and processing to reduce the cost and quality improvement of primary produce for viability.

1.5.2 Need based capacity building (On farm training)

On farm training to the farmers include field demonstrations; capacity building of stakeholders / farmers on various subjects. 105 programmes were conducted during 2020-21 with participation of 1575 growers and an expenditure of ₹ 399250.

1.6. Disaster Management

Corynespora Task Force was in action to tackle location specific epidemic Corynespora leaf disease in the disease prone areas of Karnataka and Northern Kerala on need basis. Awareness creation among growers in these regions on control measures is the main focus. The Task Force conducted field visits, provided technical support and arranged inputs for prophylactic spraying at competitive prices during 2020-21.

1.7. Tapping Skill - development Schools (TSS)

Training in tapping has been a major activity promoted by the Board for imparting new skill in scientific harvesting, for undertaking tapping occupation as livelihood as well as to equip small growers for self tapping aimed at mitigating skilled manpower shortage problem prevailing in the sector. There are 4 TSSs in ONE region. Tapping Skill Development Schools (TSS) attached to regional offices are conducting 30 days' course for new generation tappers. TSS is providing training on scientific harvesting, processing, rainguarding, stimulation and disease management. Training for 27 batches was conducted for 241 trainees and an amount of ₹ 389400 was paid towards stipend to the trainees during 2020-21.

1.8. Women empowerment - Assistance for new microenterprise startup

Entrepreneurship development and income generating activities are feasible solutions for empowering women. It generates income and also provides flexible working hours according to the needs of homemakers. The trained Kudumbashree Labour Group members are having basic knowledge, skill and potential to establish and manage many microenterprises in rubber plantation sector. The scheme provides a financial assistance @ ₹ 6000 per activity to the Labour Groups aimed at motivating them to engage in micro entrepreneurship. An amount of ₹ 6000 was paid to one Labour Group under this component.

1.9. Activities without financial support

1.9.1. Advisory services

Extension and advisory services are critical for facilitating stakeholder access to technology and knowledge. Extension officials are provided useful information about new technologies that can improve the income and welfare of farmers and other rural people. Apart from conventional knowledge and technology transfer to improve productivity, such services are also fulfilled a variety of new functions - linking smallholder farmers to high-value and export markets,

promoting sustainable production techniques and adapting to climate change. Various extension programmes aimed at enhancing NR production had been undertaken by the Department without any financial assistance. These programmes were designed in a participatory mode.

1.9.2. Special drive for productivity enhancement

After recording sustained increase in productivity for more than four decades, there has been a declining trend especially during the last 6-7 years. Some of the farmers stopped tapping, since they felt that the prevailing prices were not remunerative. Scientific and cost effective short term techniques have been promoted for reducing the cost of production and increasing productivity in rubber plantations. There is substantial scope for enhancing productivity in smallholding sector and short term measures are generally recommended for enhancing productivity in existing mature plantations. A special drive was taken up focusing awareness creation to bring out attitudinal changes for adopting GAPs augmenting productivity enhancement and cost reduction for ensuring sustainable farm income. Promoting adoption of GAPs for augmenting fast and remarkable enhancement in NR production coupled with cost effective measures was the thrust area.

Table 21. Field training, demonstrations/workshops

Name of training	2020-21	
	No. of events	No. of participants
Tapping correction	445	5570
Tapping	95	1129
Rainguarding	67	993
Sheet processing (Quality up gradation)	128	1731
Plantation management	129	1348
LFT/Weekly tapping (S2d7)	197	3208
Controlled Upward Tapping (CUT)	96	1120
Apiculture	23	552
Mushroom culture	01	13
Other training	68	767
Grand Total	1249	16431

1.9.3. Frontline Demonstrations

Setting up of demonstration plots under the RPS is helpful in scaling up the adoption level of GAPs so that the impact on production and productivity enhancement can easily be assessed and demonstrated to fellow growers

for replication. Demonstration plots were set up for weekly tapping (S2d7), other Low Frequency Tapping (LFT) systems and Controlled Upward Tapping (CUT) without providing financial assistance. Innovative growers adopted weekly tapping on experimental basis and many other

growers upgraded their tapping system to S2d3 and S2d4 (Tapping done once in 3 days and 4 days respectively). Many growers came forward to adopt CUT also. Constant follow-up and necessary advices were also done to avoid dropouts.

Table 22. Demonstration plots

Tapping System	Cumulative	
	No. of units	Area (ha)
S2d7	2986	2101.75
LFT	107326	62606.4
CUT	392	496.58

1.9.4. Farmer education & Capacity building programmes

Farmers require continuous education to stay aware of fast moving developments in technology, science, agribusiness management, and an array of other skills that influence agricultural operations. Training helps farmers to incorporate the latest technology into their daily farm operations. Farmer education programmes include group meetings, seminars, exposure visits etc. Group meeting/seminar is a useful mass educational forum where the extension officer and farmers interact each other and share ideas. Tappers Intensive Skill improvement Programme (TISP) is an off-campus capacity building programme focused on both growers and workers associated with rubber plantation industry.

Table 23. Capacity building programmes

Category	No. of events	No. of Participants
Full day seminars	12	629
Half day seminars	191	5044
Group meetings	1114	14598
Exposure visits	08	67
Other meetings	790	11547
Total	2115	31885

1.9.5. Tappers Intensive Skill improvement Programme (TISP)

Tappers Intensive Skill Improvement Programme (TISP) is a farmer friendly on

-farm training programme conducted in small holdings for a period of 8 days with the active participation of Rubber Producers Societies (RPSs) envisaging skill improvement of tappers as well as small & marginal farmers engaged in self tapping. Up skilling of existing tappers and small farmers through TISP is essential for the rectification of tapping defects to ensure sustainable yield and economic life span of the small holdings. 217 training programmes were conducted for 4817 tappers and self-tapping growers during 2020-21.

1.9.6. Rubber magazine, other publications and short films

Video films on various aspects of rubber plantation management were exhibited and distributed in the growers meetings. Subscription for Rubber magazine, the most popular publication of the Board, was also mobilized during these meetings conducted at rural pockets. 1566 growers renewed their subscription for Rubber magazine during 2020-21.

1.9.7. Group Processing Centre (GPC)

Group Processing Centre (GPC) comprised of common facilities set up under Rubber Producers Societies has laboratory for determination of dry rubber content (drc), sheet processing centre, sheeting battery, smoke house with a capacity for drying 1000 kilograms of rubber, store room, treatment plant (ETP), perennial source of water (well) set up in a minimum of 20 cents land possessed by the society.

1.9.8. Revival of defunct GPCs

A quick analysis reveals that group processing of sheet was done only in 55% of the GPC (152) whereas 29% (77) had undertaken latex pooling, preservation and marketing only and the rest of 16% GPC (44) kept their processing facilities idle. Reasons attributed are environmental problems (pollution), labour shortage, and other location specific issues. A special drive was made for reviving the defunct GPCs in a phased manner to undertake sheet processing by sorting out the issues through strategic planning. As a result, 29 GPCs were revived and commenced sheet processing during 2020-21.

1.9.9. Maintenance of Group Processing Centers (GPCs)

NR processing in India is still oriented to cater the domestic industry, which has been relying on Ribbed Smoked Sheets (RSS). 70% of the processed form of rubber in India is RSS which is against the global pattern dominated by block rubber. Traditionally, RSS have been processed in individual smallholdings adopting unscientific practices, where facilities for scientific processing are inadequate. These sheets, usually mix of good and low quality grades, are sold to village level rubber dealers. The chances of exploitation are higher in this channel. Price realization is also low due to weak bargaining power of individual farmers. Additional cost for individual processing facilities which results in higher unit cost and drudgery associated with sheet processing are also associated with this channel.

Setting up of GPCs in RPS sector is mainly aimed at quality up gradation and collective marketing of RSS for better price realization. Community processing centres provide facilities for processing latex of small growers into superior grades of RSS, thereby fetching better price. Group processing is cost effective and the profit obtained will be shared among the member growers. At present, 273 GPCs are in traditional and non-traditional area, of which 152 GPCs involved in sheet processing and collective marketing during 2020-21. Field coagulum was also collected from member growers and marketed.

1.9.10. Pooling of primary produce (Collection Depots)

Apart from the group processing, RPS had set up latex / sheet / field coagulum collection centres for collective marketing. Altogether 706 collection depots were functioning during the reporting year.

(i) *Collective Marketing*

A group management system can help to overcome the existing problems with marketing of primary produce, as growers do not have any direct access to the terminal market. It has the advantage of spreading costs over a larger volume and creates space in the market. Collective marketing requires common processing, storage and packaging facilities, shared by a group of

growers. Group processing, pooling of primary produce and collective marketing approach under the auspices of RPS with costs and resource sharing fetches premium farm gate price to growers through 'collective bargaining'.

Table 24. Collective marketing through GPC

Type of produce	Quantity (MT)	Number of growers involved
RSS	7619	10454
Field Latex	4935	

Table 25. Collective marketing through collection centres

Type of produce	Quantity (MT)	Number of growers involved
RSS	7058	28445
Field Latex	11478	49454
Field coagulum	3144	51190

1.10. Rubber Board promoted companies in RPS sector

In order to further integrate and strengthen the activities of the RPSs, Rubber Board took initiative to set up processing and trading companies with promoter share participation 51% and the remaining 49% being contribution of RPSs. While most of these are private limited companies, a few of them have become public Ltd.. At present there are 5 processing companies and 12 trading companies in the predominant rubber growing areas in Kerala. Board's officials on deputation manage these companies and act as an extension arm of Rubber Board. Reverse linkage and collective marketing for remunerative price realization are the focused activities. Companies distribute all types of plantation inputs and quality planting materials at competitive rates. The intervention of these companies could effectively control the market price.

(II) *General outcome of group processing and collective marketing*

The shift from homestead processing to group processing has brought about remarkable

improvement in the quality of rubber sheets. A good share of the sheets produced by the RPS with GPC was of RSS 1 grade. RPS was able to produce rubber sheets of desired quality that is essential for acceptance in the international market. The farmer- members whose latex was processed by the GPCs received a better price than non-members who processed latex in the homestead. The improvement in quality coupled with their bargaining capacity enabled the RPS to obtain a better price. The profit obtained from the sale of quality grade sheet after meeting the processing costs, was equally divided among the member growers. The group management system was co-evolving with the needs of the community in terms of group processing for better prices, bio-gas plant for environment concerns and substantial rural employment generation.

1.11. Special drive for bringing untapped area into tapping

The price of NR, once a major driving force in harvesting of rubber has now become disincentive to tapping turnout. In response to the fall in prices, a section of farmers is inclined to reduce frequency of harvesting and delay in reopening tapping till the expiry of the wintering off-season. During a low phase of prices, farmers are generally reluctant to open young trees for tapping. The relative share of part-time farmers is reported to be of significant proportion in the traditional area. The NR production is considerably lower as compared to the production potential, due to the prevailing low rubber prices which results in abstaining from tapping. A service provider enterprise under the auspicious of RPS-Companies consortium for facilitating crop harvesting, plantation management and marketing which results in a win-win situation for both growers and tappers is found to be helpful. The services offered may be in the form of labour supply for tapping/ plantation management, marketing facilitation or a package of services covering all the above termed as holding adoption.

1.11.1 Holding adoption

Challenges being faced by the rubber plantation sector include increasing cost of production, skilled labour shortage and other variables coupled with heavy fluctuations and

volatility in NR prices. Given the new context of large number of absentee land owners, holders with multiple income sources and limited interest in cultivation by the young generation, a new organizational intervention is required to provide a package of services to such growers for ensuring regular production from their holdings. A well-defined form of organizational innovation seems to be the need of the hour to strengthen RPSs for providing better service to growers by synergizing the emerging challenges and opportunities. Consortium of RPSs and Companies in RPS sector appears to be a highly innovative experiment with potential to address many of the issues confronted by small growers in the wake of continuance of low NR prices and skilled labour shortage. A participatory approach for cost effective plantation management and crop harvesting which results in a win-win situation for both the growers and tappers under the auspices of RPS through holding adoption can contribute much to the sector. The concept is to identify needy rubber growers in the service area of the RPS, adopt the holdings for cost efficient plantation management including harvesting by utilizing the service of RTBs/ Labour Groups under the patronage of RPS concerned, market the produce through Rubber Board promoted companies and transfer the net income to the growers' bank account. An area of 942 ha owned by 928 growers had been adopted under the programme and all the services in connection with the plantation management, harvesting, processing and marketing were provided to them. The efforts were continued to bring the areas left untapped for various reasons through institutional interventions.

1.11.2 Plantation management and marketing facilitation

Apart from holding adoption, the consortium of RPS and Companies in RPS sector provided necessary support to the needy growers by arranging tapping labourers for harvesting, skilled labourers for carrying out plantation management activities and marketing of primary produce in the form of preserved latex for bringing area left untapped on account of the above reasons into tapping. A total of 22430 growers having an area admeasuring 14000 ha were benefited out of this intervention.

II. Rubber Plantation Development & Extension in North East (RPDENE)

North East comprises eight states – Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The region comprising seven contiguous states except Sikkim is found to be agro climatically suitable for raising rubber plantations. North Eastern region, with its unique agro climatic conditions, such as tropical climate in the low elevations, exposure to monsoons, is proved to be suitable for raising economically viable rubber plantations. Greater focus needs to be given in extending rubber cultivation to new areas in Assam and other NE States.

2.1.0 Activities under MTF scheme components

2.1.1 Planting

Application for subsidy for areas planted during 2020 was not invited due to dearth of funds. The department promoted planting through extension activities, a comprehensive survey was conducted to ascertain area planted during 2020-21 and data on area assessed are tabulated in Table 26.

Table 26. Details of planting (2020-21)

Activity	Area (Ha)
New planting	1325
Replanting	110
Total	1435

2.1.2 Tribal development planting

The Board has been successfully implementing a collaborative project for tribal development with 40% contribution from the Board, 50% from concerned State Government and 10% as beneficiary contribution by way of labour. The plantations are developed by providing all inputs and scientifically planted and managed with the labour input from the beneficiaries, under the guidance of extension officers of the Board. No new tribal planting projects were undertaken during MTEF period. The immature plantations under the projects developed during the previous plan periods were properly maintained by the Board during 2020-21

Table 27. Locationwise details of projects maintained

Sl. No	Name of Project	Year of Planting	Area (Ha)	No. of beneficiaries
1	Twis-aplang-I	2015 & 2016	29.65	32
2	Twis-aplang-II	2015 & 2016	31.51	27
	Total		61.16	59

2.2.0 Quality planting material generation

Insufficient supply of quality planting materials, remoteness of planting locations and poor communication facilities are some of the major constraints highlighted for rubber plantation development in the NE region. Existence of Rubber Board's nurseries is an effective quality and price check mechanism and the nurseries serve as genuine source of nucleus bud wood for private nurseries.

- (i) *Regional Nurseries / Nurseries under District Development Centre (DDC) & Planting material production*

The Board established two nurseries in NE region, which are maintained as models for facilitating supply of good planting materials as well as providing training to stakeholders in nursery management. They are located at DDC, Jenggitchakgre (Meghalaya) and DDC, Darrangiri (Agia-Assam). During 2020-21, the activities in connection with planting material generation could be done only on a limited scale in the wake of COVID-19 pandemic and on account of low demand for planting materials. The number of budded stumps and polybag plants produced was only 23175 and 231 respectively.

2.3.0 Processing and Quality Up-gradation-individual approach

Small growers in NE region need support for establishing facilities for primary processing as they lack experience as well as funds for setting up required facilities by themselves. Small growers who are unorganized often follow

unscientific rubber processing practices leading to heterogeneous quality of RSS. Assistance was sanctioned under MTEF Scheme for incentivizing infrastructure development for processing (acquiring rubber sheeting rollers and smoke house) during 2020-21.

Table 28. Assistance for infrastructure development for processing

Scheme	No. of beneficiaries	Amount sanctioned (₹)
Roller subsidy	211	7878200
Smoke house subsidy	42	835250

2.4.0 Group processing centers- Group approach

99 Group Processing Centres have been established in RPS sector in North Eastern region with technical and financial support of Rubber Board aiming at facilitating primary processing of latex into higher grade RSS to ensure better farm gate price. During the reporting year, group processing was carried out in 51 centres.

2.5.0 Input distribution and collective marketing (other than GPC)

Apart from GPCs, RPS had set up input distribution centers, latex collection centers, sheet collection centers and field coagulum collection centers.

Table 29. Details of Collective Marketing

Type of produce	No. of RPS	Quantity (MT)	No. of growers
Field latex	7	953	622
Sheet	51	2474	11782

2.6.0 Farmer Skill up-gradation & Group Empowerment

Rubber is a relatively new crop to NE region. Adequate training for the new growers is inevitable for equipping them to undertake scientific planting and management. Empowerment of small growers/labourers through cluster formation is necessary.

2.6.1 Tappers training programs

Rubber tapping is a skilled job and the skill is

to be acquired through structured field training. Structured campus training and on- farm training/ field demonstrations on tapping are included under this subcomponent.

(i) Tappers Skill-development Schools (TSS)

There are 2 TSS in North East maintained by the Board at Hahara (Guwahati zone) and Juri (Agartala zone), for imparting training to small growers and women.

(ii) Tappers Intensive Skill-Improvement Programme (TISP)

Apart from training conducted in TSS, the Board also conducted short-term intensive training, viz. Tappers Intensive Skill improvement Programme (TISP) with emphasis on improved methods in tapping, processing and rainguarding.

Table 30. Details of Tappers programmes

Type of programme	No. of events	No. of trainees	Stipend (Rs)
TSS	3	30	45000
TISP	69	1035	1061600

2.6.2 Demonstration Centres (Model plantations, Nurseries & Training Centres)

Rubber being a relatively new crop in the NE region, efficient extension support is required to motivate farmers for planting and adopting scientific plantation management practices. Demonstration oriented training is the effective extension tool for familiarizing scientific methods among new growers. Structured training programmes on various aspects of scientific cultivation and harvesting were conducted at the following training centres/establishments of the Board under the Zonal Offices at Guwahati and Agartala. The Board maintains model plantations at four centres for conducting field demonstrations on various aspects of plantation management.

1. Nuclear Rubber Estate and Training Centre (NRETC), Agartala
2. Rubber Research and Training Centre (RRTC), Hahara
3. District Development Centre (DDC), Darrangiri

4. District Development Centre (DDC), Jenggitchakgre

During the reporting year, training/demonstration programmes were not conducted due to COVID -19 restrictions.

Table 31. Rubber production in Model plantations

NRETC/DDC/RRTC	Quantity (MT)
RRTC Hahara	22.24
DDC Jenggitchakgre	16.70
DDC Darrangiri	3.5
NRETC (Agartala)	3.18

2.7.0 Formation and Strengthening of clusters (RPS/RGS/SHG)

2.7.1 Formation of clusters

Formation of RPS is a laudable organizational innovation at the instance of the Rubber Board. But the potential of RPS is yet to be realized not only for enabling smallholders to reap economies of scale but also for stabilizing smallholder sector. There is the need for strengthening RPS individually and collectively. During the previous year 7 new RPSs were formed raising the number of registered RPSs to 516.

2.7.2 Strengthening programmes

RPS strengthening programmes involve conduct of statutory meetings as per bye-law, upgrading of performance status, rejuvenation of activities, input supply, ancillary income generation, skill development for growers and tappers etc. Conduct of statutory meetings as per the bye-law of the society is essential for proper functioning of the Society with transparency.

Table 32. Statutory meetings at RPS

Type of meeting	No. of events	No. of participants
Annual General Body Meetings	11	457
Quarterly General Body Meetings	18	407
Director Board Meetings	251	1955
Special General Body meeting	4	113

2.8.0 Extension and Advisory Services

In order to keep the farming community updated on the latest information/ technology, extension tools such as campaigns, seminars, group meeting and distribution of publications/ video films among growers are used.

2.8.1 Annual Mass Contact Programme

The practice of conducting annual mass contact programme in NE region was launched in 2010. This programme has made great impact in the rubber growing belts of NE states, where rubber is a relatively new crop to the natives. This programme is being conducted every year on relevant topics has proved to be a very effective programme not only for transferring technology related to rubber plantation sector but also for creating attitudinal changes among growers. Annual mass contact programme 2020, entitled "Good Agricultural Practices for viable rubber production" was focused on adoption of critical agri-practices towards sustainability of the sector. In the wake of restrictions imposed for containing COVID-19 pandemic, only 42 programmes could be conducted with the participation of 899 growers across the North Eastern region. The focus shift to activities for liquidating the pendency in payment of assistance in connection with Rubber Plantation Development (RPD) schemes to the beneficiaries with available human resources was the other major reason for the shortfall in achievement in this regard.

2.8.2 Exposure visits

Skill development is the process of identifying skill gaps, and developing these skills. On farm training and field demonstrations/workshops are ways to develop skills quickly. Various on-farm training programmes and exposure visits were conducted to enable farmers from different regions to interact with one another and learn from each other and to view practical examples of GAPs adopted by successful farmers. 'Sastradarsan' programme is conducted on a periodic basis to create scientific awareness among rubber growers, members of co-operative societies, RPSs and other interested groups in rubber production and processing.

2.9 Extension programs without financial assistance

2.9.1 Productivity Enhancement

When productivity is increased, the cost of production comes down leading to increased net farm income. Hence, short term productivity enhancement measures are to be popularized and encouraged among the small/ marginal growers. Various awareness/capacity building programmes were conducted aimed at enhancement of NR production and sustainability without financial assistance.

Table 33. On-farm training programmes

Type of training	No. of events	No. of participants
Rainguarding	23	91
Tapping	54	353
Controlled Upward Tapping	29	374
Quality up gradation	101	778
Rectification of tapping defects	203	1353
Plantation management	64	375
S2D7	7	47
LFT (other than S2D7)	5	21
Other trainings	31	159
Total	517	3551

2.9.2 Other capacity building and human resource development programmes

Details of other meetings and programmes for human resource development conducted are as given in Table 34.

Table 34. Human Resource Development programmes

Training Programme cum meeting	No of events	No. of participants
Off campus training-RTI	14	342
Other sponsored training	15	294
Total	29	636

III. Convergence initiatives undertaken by Rubber Production Department

The Rubber Board has experienced a sharp fall in its plan expenditure particularly from 2011-12 onwards. Decline in the expenditure of the Board, which is entrusted with the overall development of the crop will adversely affect the activities having long-term implications like R&D, extension etc. In the wake of budgetary constraints, the Board is not in a position to implement various schemes on a large scale, for assisting rubber growers as was done in previous plan periods. Hence, scope for possible convergence with central/state governments to be explored.

3.1 Recognition of Prior Learning (RPL) programmes under Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is a flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). Rubber Skill Development Council (RSDC) has been implementing Recognition of Prior Learning (RPL) projects in different states in India to recognize informal learning in rubber industry under PMKVY. RPL is a platform to provide recognition to the informal learning or learning through work to get equal acceptance as the formal levels of education. Under this Scheme, Training and Assessment fees are completely paid by the Government. Through RPL assessment and certification, the candidates will be able to align existing competencies with the National Skills Qualification Framework (NSQF) for better employment opportunities.

Rubber Board has been approved by National Skill development Corporation (NSDC) as the Project Implementing Agency (PIA) for conducting programmes in Kerala, Tamil Nadu, Karnataka, Assam and Tripura states with the participation of RSDC on four job roles, viz. Latex Harvest Technician (LHT), Latex Processing Technician (LPT), General Worker Rubber Plantation (GW) and General Worker Rubber Nursery (NW).

Recognition of Prior Learning (RPL) programmes

New RPL programmes could not be conducted due to COVID -19 restrictions in force.

3.2 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

Rubber plantations provide average daily employment to about 0.5 million people, directly in activities ranging from planting to crop harvesting. Activities related to rubber plantation development create durable assets that lead to sustainable livelihood. The activities also help in reducing run-off and soil losses, recharge groundwater, increase vegetative cover and ecosystems through drought proofing. As per MGNREGA Master Circular 2017-18, works in rubber plantations can be taken up in convergence of MGNREGA. Converging partners can provide handholding support to cultivators during the initial years of rubber plantation & development, build their capacity for taking up harvest and post-harvest activities, facilitate value addition (forward linkage) and provide a strong marketing network.

During 2020-21, two activities were promoted in convergence with MGNREGA which included (i) silt pit / edakkayyalas / terrace making for soil protection and water harvesting in rubber plantations and (ii) works related to plantation development.

Table 35. Convergence activities under MGNREGS

Activities	No. of units	Area (ha)
Soil protection & water management	14884	8189.33
Plantation development	245	112.14
Plantation management	5164	2921.11
Total	20293	11222.58

3.3 Convergence programmes with Government of Kerala

Rubber Board took initiative to provide handholding support to rubber growers through dovetailing of projects of Kerala Government. Major projects undertaken by the Board are:

3.3.1 Rubber Production Incentive Scheme (RPIS)

Prolonged periods of low NR price would affect the livelihood of the rubber smallholders and force them to venture into other alternate crops. If left unaddressed, the phenomenon in turn would affect the domestic NR production and rubber products manufacturing. In this backdrop, Government of Kerala decided to support small/marginal growers in the State and launched Rubber Production Incentive Scheme during 2015-16 for promoting domestic NR production. Small farmers, having rubber plantation up to 5 ha are eligible for enrolment. But the benefits of the scheme is limited to 2.00 ha. As per the scheme, if the price of rubber falls down below Rs.150 per kg then the difference between the daily Rubber Board index price and ₹ .150 will be paid by the government to the beneficiaries through direct benefit transfer (DBT). The scheme is implemented through RPS with logistic support of Rubber Board. Sixth phase of the scheme was implemented during 2020-21 with a budgetary allocation of ₹ 500 crore.

Table 36. Details of RPIS implementation (2020-21)

Rubber Production Incentive Scheme (RPIS)- Phase VI		
1	Total financial outlay (₹ cr)	500
2	Total registration (No)	512744
4	Total RPSs involved	1910
5	Total sale bills confirmed during 2020-21	213890
6	Amount transferred to beneficiaries (₹ cr)	34.07

3.3.2. Intercropping of medicinal plants in Rubber Plantations

A trial cultivation of medicinal plants as intercrop in selected rubber holdings has been undertaken in Nilambur region as part of convergence initiative with Kottakkal Arya Vaidya Sala during 2020-21 amidst the COVID-19 pandemic. M/s. Thunchathu Ezhuthachan Rubbers (Pvt.) Ltd. Nilambur, (a company jointly promoted by Rubber Board and RPSs) has taken up the trial cultivation in an area of 5.00 ha adopted by the company for replanting during 2020 and

in 0.20 ha possessed by the company. As the part of the project implementation, an MOU has been executed between AVS Kottakkal & M/s. Thunchathu Ezhuthachan Rubbers (Pvt) Ltd for facilitating free supply of planting materials and buy back of products. The company received the planting materials from AVS, Kanhirapuzha herbal garden at free of cost. The details of intercropping are given in Table 37.

Table 37. Planting details of medicinal plants

Area (ha)	Name of plant	Number of saplings
5.20	Adalodakam	45000
	Thechi	2000
	Aloe Vera	1000

IV. Other activities undertaken by Rubber Production Department

4.1.0 Insurance scheme for rubber plantation

The rubber plantations are exposed to perils like fire, lightning, forest fire, bush fire, flood, storm, tempest, inundation, land slide, rock slide, earthquake, drought etc. The peculiarity of rubber plantations is that if a few trees in a holding are damaged or perished, that particular patch of land cannot be used till the time the entire trees are cut and the area replanted. The insurance scheme is applicable to both mature and immature plantations. Risks covered by the Scheme are, fire, lightning, riot, strike & malicious damages, bush fire, forest fire, flood, storm, tempest, inundation, land slide, rock slide, earthquake and drought; provided the Block /Taluk concerned is declared as drought affected by the competent authority of the State Government. The policy is also extended to cover the loss or damage caused by road/rail/vehicles and wild animals. Loss due to diseases and insect-pest are excluded from the scope of cover. The Scheme was operated by M/s National Insurance Co. Ltd with the logistic support of the Board. The scheme was not renewed from 01.04.2016. However, claims of plantations already insured are processed.

Table 38. Details of Compensation paid during 2020-21

Particulars	Achievement
Compensation paid (₹ in lakh)	14.787
No. of beneficiaries	252

4.2.0 Various surveys

Authentic, complete and up- to- date information is a prime task for generation of database which plays a vital role in planning

and decision making process. The primary data are collected through field surveys. Rubber Production Department regularly conducts various field surveys for collection of information on planting, production, sale/ stock, incidence of diseases etc. Field level sample survey for collecting data on production, sale and stock of rubber was conducted on a monthly basis.

The National Research Programme on Plantation Development (NRPPD) at Centre for Development Studies (CDS) is a research-cum-training programme sponsored by the Ministry of Commerce, Government of India. During 2020-21, Rubber Production Department undertook collection of data for the studies on functioning of RPSs in Kerala conducted by NRPPD.

4.3.0 Facilitation for Human Resource Development of stake holders

RP Department supported Rubber Training Institute (RTI) of the Board through mobilization of rubber growers for participation in campus training programmes on various aspects of rubber cultivation and plantation management. RP Department facilitated capacity building programmes to improve skills in entrepreneurship, accounting, problem solving and other leadership qualities of RPS Director Board members, members of Kudumbashree Labour Groups by nominating them to the training programmes.

4.4.0 Labour welfare of Rubber Tappers

RP Department is entrusted with the implementation of various labour welfare schemes. Applications for the assistance under various welfare schemes were received at Regional Offices. Procedures such as field inspections/enquiry for the needy cases, recommendations for assistance for eligible

cases and processing of payment advices for disbursing the assistance were carried out at regional offices.

4.5.0 Swachh Bharat Action Plan (SAP)

'Swachh Bharat Abhiyan' or Swachh Bharat Mission is a nation-wide campaign in India that aims to clean up the streets, roads and infrastructure of India's cities, towns, and rural areas. Swachhta Action Plan is a milestone initiative in mainstreaming Swachhta elements across all sectors of the Government in an elaborate, accountable, and sustained manner to realize the Swachh Bharat of Prime Minister's vision and Gandhiji's dream. As the part of the programme, 1217 awareness campaigns were hosted with the participation of 21298 participants across the rubber growing states.

4.6.0 Internal Extra Budgetary Resources (IEBR)

4.6.1 Distribution of planting materials and Certification of planting materials in private nursery sector

The prime IEBR source is the distribution of planting materials generated from the nurseries maintained under the supervision of the Department and certification of planting materials in private nursery sector. The IEBR generated through these activities during 2020-21 was ₹ 1.73 crore

4.6.2 Technical advisory

With a view to streamline the extension services in the changing scenario, Board has decided to levy service charge for providing special extension service to rubber growers other than routine extension and advisory services. The service charge for single visit for special extension service is fixed as ₹ 4000 plus GST @ 18% for large estates having an area above 10 ha and ₹ 3000 plus 18% GST for growers less than 10 ha. During the report year, an amount of ₹ 20034/- being the service charges was credited to the IEBR.

4.6.3 Plantation Certification

Rubber Board has introduced Plantation Certification programme from 2014 onwards, after discontinuing the registration activity since 1988. Plantation Certification is by which, details on rubber holdings of individuals are certified

on a voluntary basis, which can be used by the growers for various purposes. A nominal fee is collected from rubber growers for issue of Plantation Certificate. The programme would help to generate database on rubber plantations in India. During 2020-21, total 4188 plantations measuring an area of 2800 ha were certified and received ₹ 14.73 lakh towards certification charges.

4.6.4 Valuation of Rubber Trees

Public/private establishments and individual growers are approaching Rubber Board for reports on valuation of rubber trees and assessment of compensation due to damage/Government acquisitions. Rubber Board undertakes valuation of rubber trees and assessment of compensation, against proper request and payment of service charges. 330 certificates were issued and an amount of ₹ 872000/- was collected as service charges including GST.

4.6.5. Income from sale of rubber from Farms

The Board maintains model plantations at 6 centres (NRETC Agartala, NRETC Andamans, RRTC Hahara, DDC Darrangiri, DDC Jenggitchakgre and DCNP Rukhi). The income from sale of rubber produced at these farms was ₹ 1.15 Crore

4.6.6. Service charge from State Government

Government of Kerala launched the Rubber Production Incentive scheme on July 1, 2015, as part of its efforts to save rubber farmers from a sharp fall in prices. The objective of the scheme is to ensure ₹ 150 per kg to rubber farmers. Under this scheme, the difference between ₹ 150 and daily cost index set by Rubber Board, is given as subsidy and offered straight to the farmer's bank account. The scheme is implemented with the technical human resource and infrastructure support from Rubber Board. The applications approved by RPSs are verified by the officials of Rubber Board and confirm the eligible cases on online mode and ten per cent of the cases are physically verified as a safe guard measure. The incentive is credited into the bank accounts of the farmers promptly against the sale bills that are confirmed by the Rubber Board officials. An amount of ₹ 8351280 was received towards the service charge and is credited to the IEBR.

V. Digitalized Extension and Advisory Services in the COVID - 19 pandemic scenario

Extension and Advisory Services (EAS) of Rubber Board facilitate the transfer of knowledge, information, improved technologies and practices to farmers, promote farmer organizations and support the various actors in the rubber value chain. Extension personnel have been using a wide range of conventional extension approaches, which mainly rely on face-to-face communication. These include: mobilizing farmers; provision of one-on-one advisory support at the field level; organizing demonstrations, on-farm trainings, workshops; and holding informal group discussions, seminars, campaigns using printed material (leaflets, pamphlets, etc.). The conventional extension approaches are highly effective for awareness creation and scaling up the adoption level of Good Agricultural Practices (GAPs). However, extension personnel are currently

forced to stay away from regular face-to-face contact, and awareness and capacity building programmes have slowed down as governments are now mandating social distancing to slow down the spread of COVID-19 by minimizing close contact between individuals. Hence, to adapt to the present situation and also operate within the government regulations, extension and advisory services need to change the way of operation. In order to cope up with the situation there was a paradigm shift to digitally-enabled extension tools for complementing the conventional extension services with cost-effective and enhanced farmer reach out. RP Department hosted many online training programmes, group meetings, RPS statutory meetings, seminars, campaign programmes on various social media platforms such as WhatsApp, Google Meet, Webex, Zoom etc. as the part of extension activities.

Table 39. Social media platforms used (2020-21)

Sl. No.	Type of Platform used	No. of events	No. of Participants
1	Cisco Webex	4	28
2	Conference Call	6	27
3	DUO	1	8
4	Face Book	1	10
5	Google Meet	393	5641
6	Skype	7	95
7	WhatsApp	475	3403
8	ZOOM	1	26
Total		888	9238

VI. Credit Linked Rubber Plantation Development Plan (CLRPDP) for North East

India is a natural rubber (NR) deficit country where the gap between production and consumption has been widening of late. Obviously, the gap in the domestic demand and supply is met through imports. NR consumption in the country in 2030 is projected at around 2.00 million MT. Self-sufficiency has been the main focus of development plans in NR sector. National Rubber Policy (2019) envisages self reliance in NR production through area expansion and replanting of uneconomic plantations. Suitable

lands for expansion in the traditional areas have been almost exhausted. The northeast region is identified as an agro-climatically suitable area due to which accelerated rubber cultivation has been taken up both by public and private participation. It has been estimated that rubber can be successfully grown in an area of 200000 hectares with appropriate refinements in agro-management practices in the seven sister states of NE region. Rubber Board has been focusing on the North-East for further extension

of rubber cultivation to make the region the next rubber-producing hub and meet the growing demand in the country. Credit Linked Rubber Plantation Development Plan (CLRPDP) supported by Automotive Tyre Manufacturers Association (ATMA) and NABARD is intended to increase production of natural rubber in India by accelerating new-planting and replanting of rubber in NE region. The scheme is proposed to be implemented within a span of five years from 2021-22 to 2025-26.

Under the Scheme, a credit enhancement and guarantee plan is incorporated, wherein banks provide loan during immature phase of rubber plantation through refinance from National Bank for Agriculture and Rural Development (NABARD) and growers pay back the dues

during mature phase. Financial assistance from participating tyre manufacturing companies through ATMA shall take the form of interest subvention during the mature phase. This shall be implemented by Rubber Board utilizing fund sourced by ATMA. But the banking plan is yet to be approved. Rubber Board is on the cusp of implementing Credit Linked Rubber Plantation Development Plan (CLRPDP) in NE region from 2021 onwards. The planting target set up for 2021-22 FY is 10000 ha.

Preparatory works such as identification of areas and beneficiaries, cluster formation of beneficiaries, inviting tenders for procurement of planting materials etc. were undertaken during 2020-21 FY so that the planting could be carried out during 2021 planting season.

VII Production and productivity of NR

In the case of NR, one of the important factors that affect the harvesting and plantation management decisions of farmers is the price. The volatile/fluctuating NR price influences replanting and production decisions of small farmers especially in Kerala, the state which contribute more than 78% of domestic NR production. During the period of price fall, there is a tendency among small growers to skip even the critical agro-practices and tapping due to apprehensions on benefits. Decrease in prices coupled with high labour cost compelled farmers to minimize harvesting days, reduce application of fertilizers and other inputs and stay away from proper maintenance of trees.

Retaining the rubber plantations above the breakeven level, particularly in the wake of low NR price, is a challenging and herculean task to the extension machinery. The extension machinery, took efforts for motivating growers to maintain their plantations productive by adopting GAPs. Measures taken by Rubber Board to recoup the domestic NR production included promotion of rainguarding, LFT for cost reduction; formation of RTBs under the patronage of RPS to ensure supply of skilled tappers/labour force to the sector; supply of inputs for disease management and rainguarding through Board promoted companies; harvesting in untapped areas through holding adoption/marketing facilitation and various farmer education/ capacity building

programmes across the rubber growing belts. These efforts helped enormously to maintain the domestic NR production during the COVID -19 challenging scenario.

The RP Department has been implementing several activities at the regional and field levels with the active participation of RPSs to increase the production and productivity of plantations. The rain guarded area was 2.10 lakh ha in 2020-21, which is less than 40,000 ha than the previous year. The plantation adoption programme also brought 14000 ha under tapping. Total tapped area was 4.96 lakh ha against the total mature area of 6.93 lakh ha. As a result, India's NR production maintained the momentum to reach 7.15 lakh MT in 2020-21. It is for the second time since 2014-15 that NR production has crossed 7 lakh MT.

Natural rubber (NR) production in India increased a tad during the 2020-21 fiscal despite the shutdown due to the Covid-19 pandemic and recorded an increase of 0.4% to reach 7.15 lakh tonnes during 2020-21 compared to previous year. The rise in production is attributed to hike in the prices, several activities initiated by Rubber Board at field level, with the active participation of Rubber Producers' Societies such as campaign meetings followed by on farm training aimed at capacity building of small growers and tappers, support scheme

for rainguarding, facilitation for soft loans from co-operative banks at minimum interest rate for installation of rain guards, input supply through Rubber Board promoted companies and additional production from rubber estates that

remained untapped during the previous years on account of holding adoption. Higher prices have bolstered the natural rubber production in India in 2020-21 amid a rampaging COVID-19 crisis that has severely crippled demand.

VIII Highlights of a Activities during the year 2020-21

- Scheme implementation under Medium Term Expenditure Framework (MTEF)
- Thrust area – production and productivity enhancement through extension oriented activities
- Special drive for bringing untapped area to tapping-Holding adoption and marketing facilitation
- Special scheme for promoting rainguarding in the COVID -19 scenario
- Paradigm shift to digitally-enabled extension in the wake of COVID- 19 pandemic for complementing the conventional extension services with cost-effective and enhanced farmer reach out.
- Campaign 2020 - Promotion of self tapping and family labour involvement for viable rubber production through awareness creation and capacity building
- Price support in convergence with Government of Kerala (RPIS)- Sixth phase
- Nursery registration and certification of planting materials in private rubber nursery sector for quality assurance
- RTBs for addressing shortage of skilled tapper and holding adoption
- Women empowerment- Assistance for new microenterprise start up
- Convergence with Kerala Agricultural Department for integrated farming (scheme for intercropping vegetables and fruits in young rubber plantations)
- Convergence with Kottakkal Arya Vaidya Sala for intercropping of medicinal plants in rubber plantations
- Convergence initiatives with MGNREGS for plantation development, plantation management and soil protection & in situ water harvesting in rubber plantations
- RPS based activities for quality up gradation and collective marketing of primary produce for realization of better farm gate price
- Cluster development & empowerment- Formation of RPS, SHG and labour groups and strengthening of activities
- Critical input supply through Rubber Board promoted companies in RPS sector
- Facilitation for availing bank credit at a nominal interest rate to needy growers for rainguarding in the wake of COVID - 19 pandemic
- Special scheme for spraying against Colletotrichum Circular Leaf Sopt Disease (CCLSD)
- Preparatory work for implementing Credit Linked Rubber Plantation Development Plan (CLRPDP) for North East
- Farmer education & Capacity building – on farm trainings/demonstrations/ exposure visits for growers and tappers

PART – V

RUBBER RESEARCH

Rubber Research Institute of India (RRII), the Research Department of the Board, has its headquarters in Kottayam, Kerala with nine Regional Research Stations (RRS) in the states of Kerala, Tamil Nadu, Karnataka, Maharashtra, Odisha, West Bengal, Tripura, Assam and Meghalaya. Field experiments of RRII are conducted in the Central Experiment Station (CES) at Chethackal near Ranni, Pathanamthitta District, Kerala, which has an area of more than 250 ha. Owing to constraints in land availability, many experiments and on-farm evaluation trials for validation of research from the laboratory and farms of RRII are carried out in growers' fields/ large estates. Each RRS has research farms of nearly 40 to 50 ha, in which location-specific research is undertaken including developing high yielding clones and farm practices for different agro-climatic regions where these RRSs are located.

Outcome of the research is communicated through research publications. RRII publishes a peer reviewed international scientific journal named 'Rubber Science'. Besides this, research articles are also contributed to other peer reviewed international and national scientific journals as well as popular magazines, newspapers etc. In addition to publishing the research findings through various journals and magazines, scientific findings are recommended for adoption by growers after approval by Scientific Advisory Committee.

RRII and its regional stations are involved in active research programmes under the major Scheme component "Strengthening of Rubber Research", which is broadly classified under 13 research components viz. 1) genetic improvement of *Hevea brasiliensis* for developing ideal clones, 2) Advanced Centre for Molecular Biology and Biotechnology, 3) rubber-based farming systems and farm management, 4) use of remote sensing and geographic information system (GIS) in NR plantation sector, 5) development of plant protection protocols 6) environmental protection and climate studies,

7) socio-economic dimensions of the Indian NR sector, 8) primary processing of latex and dry rubber and development of specialty rubber compounds for specific industrial applications, 9) technical support services, 10) linkages with national and international centres of excellence, overseas training and 11) RRII Research Fellowship scheme. In addition, activities in RRS come under 12) strengthening of Regional Research Stations (other than NE Region) and 13) strengthening of Regional Research Stations (NE Region).

A summary of the performance and salient achievements of research schemes during 2020 -21 are furnished in the following sections.

1.0 Strengthening of Rubber Research Scheme

1.1.0 Genetic improvement of *Hevea brasiliensis* for developing ideal clones

- Upgraded three clones (PB 255, PB 280 & PB 314) to Category I for traditional rubber growing regions (i.e. for commercial cultivation)
- Indigenously developed NR clone RRII 430 was found to be getting adopted widely due to its fast growth, high yield, drought tolerance and disease tolerance.
- The hybrids developed through hand pollination programme are being evaluated. In the reporting period, performed 2,591 hand pollinations involving 16 parental cross combinations. In addition, 700 half-sibs from promising parental clones were collected and planted as well in the seedling nursery 2020 for further evaluation.
- From the 'Clonal nursery evaluation of progenies of RRII 105 x PB 280 and reciprocal (2013) trial, RRS, Dapchari' aimed at developing drought tolerant clones for the non-traditional region, six hybrid clones with consistent test tap yield superior to the check clone RRIM 600 were identified. Clone 96/114 was the top yielder. Three clones having high summer

yielding potential were also identified.

- In a large scale evaluation of ortet clones selected from Cheruvally (2005), two ortets viz. Cyo 72 and Cyo 41 were found superior in terms of yield.
- Ten hybrids in a trial of 720 seedlings (comprising hybrids and half-sib seedlings from breeding orchard) had yield more than 20g per 10 tap indicating their high yield potential.
- Two clones viz. 05/139 and 05/432 continued to exhibit high yield of 19.4 g t-1 t-1 and 18.1 g t-1 t-1 respectively, than RR11 429 (13.0 g t-1 t-1) and RR11 105 (10.1g t-1 t-1) in a study of clonal nursery (2012) with 26 clones.
- Through polycross breeding, identified two polycross progenies with superior yield. One progeny each with more than 90 g t-1 t-1 and 80 g t-1 t-1, 5 progenies with more than 70 g t-1 t-1 and 12 with over 60 g t-1 t-1 ensures the scope for promising clones.
- A polycross seed garden of 27 clones comprising of W x W and W x A hybrids, popular clones and germplasm accessions, etc. with about 10,000 plants was established in three experimental plots in an area of about 20 ha at Arasu Rubber Corporation, Kanyakumari District of Tamil Nadu. This garden would facilitate better recombination possibility between clones and to develop seeds with superior yield and other secondary traits.
- Imported clones from China, Vietnam and Cambodia were found to have better resistance to important fungal leaf pathogens like *Corynespora*, *Colletotrichum* and *Phytophthora*.
- A direct relationship was detected ($R^2=0.66$) between latex [ATP] and test-tap yield potential of the progenies In a study on relationship between concentration of ATP in latex and yield potential using a heterogeneous seedling population, showing that high test-tap yield and high latex [ATP] could ensure more precision in recovery of high yielding selections in nursery level.
- Identified clones with higher performance index under cold and drought stress conditions (P021, P101, P102 and P107 at RRS, Agartala under cold condition ; P026 and P102 at RRS, Dapchhari under hot condition). Three pipeline clones P021, P101 and P107 possessed high PI with adaptability to cold and drought.
- In the cold-prone environment at Agartala, 17 pipeline clones along with RR11 430, RR11 600 and RR11 105 could be identified as potential clones for latex-timber. Under drought-prone environment (RRS, Dapchhari, Maharashtra) 12 pipeline clones along with RR11 208 and RR11 430 demarcated as potential latex-timber candidates.
- Early results from the first ever Central large Scale trial (LST) of Participatory clone evaluation (2008) indicated three pipeline clones to be superior over RR11 430 in terms of growth, tappability, yield and secondary traits.
- In the 2010 LST at Central Experimental Station, pipeline clone P 044 continued to exhibit superior girth compared to other pipeline clones and it was comparable with RR11 414. In the on-farm trial laid out at Pudukkad Estate 2010, P 019 had maximum tolerance to ALF disease followed by RR11 430, P 047 and P 80.
- Under phase 3 Central LST (2012) at CES, 6 pipeline clones continued to show better growth than RR11 105, P110 and P104 scored consistently maximum girth. Pipeline clones P116 and P156 along with RR11 430 continued to show very low ALF disease incidence (less than 10%) implies good tolerance to ALF.
- Under Phase 4 Central LST at RR11, three pipeline clones P129, P181 and P172 continued to have better girth than RR11 105 and remaining clones. Three RR11 400 series check clones viz. RR11 414, RR11 417 and RR11 430 continued to have highest girth compared to all other clones in the trial.
- Six clones primarily selected for high yield from diverse locations viz., Kanyakumari, high altitude region, Ambalavayal (Wayanad District) and NE India (Guwahati) were planted in the final

phase of Participatory clone evaluation in four OFTs in traditional region and planting materials were supplied for clonal nursery in RES, at Nagrakkatta, West Bengal.

- In a stock-scion interaction study, assorted rootstocks were found to negatively influence the girth potential of clones.
- In a trial with 40 experimental clones developed for drought tolerance by hybridizing high yielding clone (RRII 105; female parent) with a drought tolerant clone (PB 280; male parent) and its reciprocal six hybrid clones exhibited consistently superior juvenile yield than check clone RRIM 600 in peak yielding season. Highest yielder was clone RRII 114.
- Mean yield data of 3-year old progenies developed through introgressive hybridization of high yielding & susceptible clones of *H. brasiliensis* as female parents and other disease-tolerant species (*H. spruceana* and *H. camargoana*) and wild accessions (RO 380 and RO 2871) as male parents indicated RRII 430 x RO 380 (mean, 29 cm) as better family.
- Elucidated the seasonality (monthly distribution pattern) in yield share for the entire rubber growing areas in India based on long term yield of 10-15 years from 24 field trials across 10 locations and submitted a technical report based on the findings.
- The results offer valuable tips to harvest maximum latex during the peak yielding period which falls during monsoon in the traditional region and the cool months preceding winter in the other two regions viz., NE and Central India. This also pointed the necessity to do rainguarding during monsoon in the traditional region.
- A systematic key for the identification of 43 indigenous and exotic clones imported was formulated based on structural and morphological traits. This revealed the existence of maximum diversity for structural traits with reasonably good stability for characterisation of clones from Cambodia and Thailand.
- In continuation of the method devised for DRC estimation of *Hevea* latex, a new methodology was developed for quick coagulation of sheet rubber. Raw rubber properties and technological properties were comparable with Standard protocol.
- When 12 monoclonal blocks comprising pipeline clones and popular clones were evaluated, clones P 70, and RRII 429 recorded superior girth (24.0 cm each) and volume (0.01m³ each). RRII 414 and RRII 417 (23.0 cm each) clones P 21 and P 26 (22.0 cm each) were also found promising in terms of growth.
- Planting for clone evaluation trial with 17 pipeline clones (produced through hand and open pollination) and three check clones was carried out at RRS, Dapchari.
- The two top ranking clones in terms of less leaf drying viz., P 114 and P 192 also maintained relatively more number of whorls and leaves and height indicating their better initial growth in drought prone region.
- Evaluation of five IRCA clones introduced in 1991 in the first LST was completed. IRCA 130 and IRCA 109 were identified as superior latex timber clones.
- Performance of 37 pipeline clones in 5 PCE (farmer participatory) trials across Kerala in 5 locations : P 15, P 21, P 63, P 66, and P 67 were high yielding. P 21 was found to be significantly superior to the best clone RRII 430, and P 67 and 74 were on par, in the PCE mother trial at Central Experiment Station (CES).
- Genetic authentication of Wickham clone collection is in progress. Leaf samples of 300 plants from 101 clones collected and processed. Identification and removal of off-types in 4 clones was completed using RAPDs.
- 183 Wickham clones, 4548 wild Amazonian accessions and 5 other species are conserved in field gene banks. 119 accessions in Germplasm collection were test tapped to confirm their potential.
- Performance of 148 selected wild germplasm accessions in 9 further evaluation trials at RRII, CES, RRS, Dapchari and Nagrakkatta (83 mature phase & 65 immature phase) was monitored and observed that eight selections are

promising in 4 mature trials under tapping.

- Bark anatomical profiling of 807 bark samples from 3 trials FET 2005, FET 2008 and OST 2006 was completed for assessing yield related traits. One wild accession (MT 4788) with considerably higher number Latex Vessel Rows in the bark than the control RR11 105, identified in a further evaluation trial of promising wild accessions. This was used in breeding for increased yield in ensuing season.
- Two wild accessions show drought tolerance in a hot spot screening of 23 shortlisted clones at RRS Dapchari and nine wild accessions continued to show cold tolerance in Nagrakatta, West Bengal, while 3 clones also showed good yield.
- Continued use of wild selections in hybridization with elite clones for genetic improvement and made 1036 crosses by hybridizing Wickham and potential wild accessions. Recorded an initial fruit set of 7.9% and generated nine more W x A hybrid with a total of 618 hybrids so far (including interspecific hybrids) which are being evaluated in seedling nurseries.
- Juvenile evaluation of 74 WxA hybrids from 2016 HP confirmed superiority of two very promising hybrids and seven other potential clones and were promoted for further detail field evaluation.
- Out of 215 OP seedlings collected in 2017, seven showed very promising hybrids for further evaluation. Bark anatomical profiling of 332 hybrid progenies of 2013, 2014 and 2016 W x A HPs was done and hybrids with superior latex vessel number identified for further evaluation and breeding.
- 43 promising inter-specific and W x A hybrids and seven OP selections from 2009-2014 HP programmes, planted in 2019 in two field trials at CES and Nettana are under further evaluation. Monitored a mapping population comprising 85 interspecific progenies (2019).

1.2.0 Advanced Centre for Molecular Biology and Biotechnology (ACMBB)

- Permission was obtained from Genetic Engineering Approval Committee (GEAC),

Govt. of India to conduct confined field trial of the MnSOD transgenic plants (clone RR11 105) at Regional Research Station, Guwahati, Assam. Arrangements are being carried out for initiation of the field trial during June 2021, the coming planting season.

- The site of integration of introduced MnSOD gene along with promoter, reporter and antibiotic marker gene in one line of transgenic rubber plant developed (L1) was estimated by genome walking technique. Analysis of sequenced region and sequence homology with available whole genome sequence information revealed that the introduced DNA fragment got integrated in to the intronic region of a variant of Leaf rust disease-resistance receptor-like protein kinase gene.
- Completed molecular analysis for gene integration in transgenic plants harbouring osmotin gene. Amplified native osmotin gene from genomic DNA of clone RR11 105 to distinguish the native osmotin gene from transgene. Amplified two alleles of the gene from RR11 105 are sequenced. On sequence analysis, it was proved that native gene is intronless and both the alleles are distinct from inserted osmotin gene. The sequences were deposited in the gene bank. Thus, the uniqueness of the inserted osmotin gene was proved.
- Experiments are being continued for developing more transgenics of elite clones, integrated with agronomically vital genes such as osmotin and HSP31 for biotic/ abiotic stress tolerance, HMGR for enhancement in yield, IPT for enhanced growth & TPD tolerance and sorbitol6 phosphate dehydrogenase for drought tolerance.
- Attempts are also made for validation of the marker free construct for developing marker free transgenics which will have more public acceptance.
- Initiated an external fund project on "Development of Hevea transgenics incorporated with translationally controlled tumor protein (TCTP) gene for enhanced vegetative growth and TPD tolerance". Plasmid vector was

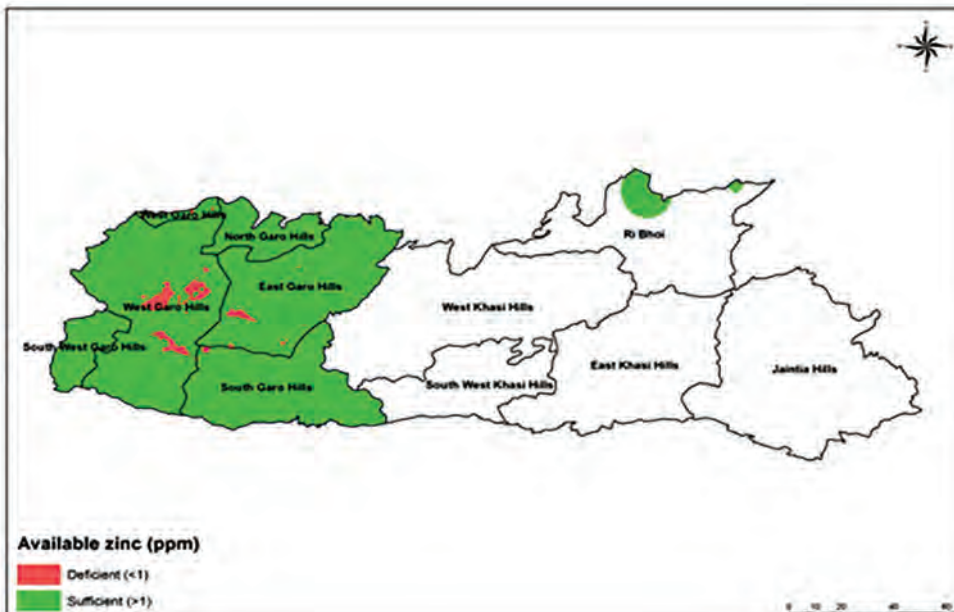
transformed into *Agrobacterium* for use in genetic transformation. Concentration of the selectable marker glufosinate was optimized.

- Regenerated CLFD tolerant plants through somatic embryogenesis from cassicolin toxin habituated callus in an otherwise susceptible *Hevea* clone RR1105. Laboratory level bioassays confirmed improved tolerance of the regenerated plants towards CLFD. Regenerated plants were successfully established in the field. Multiplication through bud grafting has been achieved and the bud-grafted plants also exhibited improved tolerance towards CLFD in the lab level bio assay.
- Gynogenic haploids with confirmed ploidy (n=18) have been regenerated through embryo sac culture for *Hevea* clones RR11414 and RR1105. Haploid plants of clone RR11414 have been successfully established in the field.
- For genetic authentication studies to identify of each plant point in 'Wickham' germplasm collection at RR11, genomic DNA was isolated from more than 125 plants belonging to more than 55 genotypes. RAPD reactions were set using 10 different primer combinations to estimate genetic uniformity of plants belonging to genotypes like Tjir 1, Mil 3/2, PB 86 and RR1133 along with control DNA samples. Analysis of the banding pattern indicated mixing-up of clones in Tjir1 set whereas all plants of Mil 3/2 appeared to be true to type.
- In connection with the study on identification of beneficial AM fungal species associated with *Hevea* root tissues, ribosomal and ITS region of AM fungi from the DNA extracted from root tissue of two sets of rubber plants (one year old seedlings & five year old trees) was sequenced to understand the species level diversity of AMF in root tissues of *Hevea*. A total of 14 different species of AM fungi coming under the families viz. Glomeraceae, Gigasporaceae and Aculosporaceae and Paraglomeraceae were identified from the root tissues of *Hevea* plants. Species wise sub-clusters specific to plant age was observed during sample source based phylogenetic analysis.
- In the collaborative project with CSIR-NEERI on "metagenomics and microbial identification in rubber ecosystems", the fungal ITS region was successfully amplified from all 130 samples from five different land types (weeded rubber, unweeded rubber, rubber with cover crop, cocoa rubber intercrop and forest) using fungal ITS region specific primers. Preliminary sequence analysis results indicated that microbial diversity is more in forest soil whereas concentration is more in the soil collected from rubber plantations having cocoa as intercrop.
- Study on the identification of epigenetic changes accumulated over a period of 30 years within the genome of RR1105 indicated the evidence of DNA methylation polymorphism presence. The results suggested that RR1105 clonal characters may change over a period of 30 years. Confirmatory tests are in progress.
- For completing the whole genome sequencing project, pending genome assembly was outsourced. MoU and NDA were signed by the selected firm and work order issued. Data handed over for completion of the project. Initiated preliminary data analysis. An interim report on read statistics was generated and analysis is in progress.

1.3.0 Rubber based farming systems and farm management

- Completed the analysis of soil samples collected for fertility mapping from Manipur and Meghalaya and Mapping of fertility status (13 fertility parameters) of rubber growing regions of North East India.
- Soil acidity is a major fertility constraint in rubber growing regions of North East India. Deficiency of micronutrients Zn and B was also widespread. Soil organic carbon status was less compared to traditional rubber growing regions.
- Development of online fertilizer recommendation system (RubSIS) for rubber growing regions in North East is in progress.

- MOU was signed between Rubber Board, Spices Board and IITMK for developing online fertilizer recommendation for cardamom plantations in Idukki District.
- Rubber based homestead farming system is in progress in Agarthala and Kottayam. Rubber was planted in paired row system of planting to release more land and light for including intercrops and enterprises like pisciculture, goatery etc.
- Citrus, litchi and mango planted as perennial intercrops in Tripura and jack, mango and coconut planted as perennial intercrops in Kerala established well.
- Evaluation of latex coated newspaper as an alternative for plastic mulches was completed. It was durable in the field for 6-8 months period and controlled weeds.
- Rubber plantations in landslide prone areas in Kerala were delineated and categorized into low, medium and high land slide susceptibility zones. Substantial area under rubber plantation in Kerala is situated in medium landslide vulnerable category spread over in various districts and extent of area under rubber plantations in high landslide susceptibility zones was more in Kottayam, Idukki, Kannur and Palakkad districts.
- Studies were conducted in many rubber clones and wild accessions to understand the intrinsic adaptive mechanisms of rubber plants for drought and cold stresses. Clones like SCATC 88/13, RRIM 600 and RRIL 208 were found to be cold stress tolerant whereas RRIL 430 and RRIL 208 were comparatively better drought stress tolerant clones.
- Among the 33 germplasm accessions analyzed for cold stress tolerance, accessions namely, 102/2003, 287/2003, 218/2003, 521/2004 and 585/2003 were at par with the cold tolerant check clones namely, RRIM 600 and RRIL 208.
- Performed physiological evaluation of many ortet clones for drought/cold tolerance and observed that Agartala selections were superior to other ortets for growth and test yield.
- A growth regulator known as paclobutrazol (PBZ) applied in soil for growth increase and short compact canopy resulted in better trunk girth increment in root trainer raised rubber plants rather than in polybag raised plants. The interactive effect of PBZ and high density planting was obvious in root trainer plants.
- In a study with stimulant induced yield increase, the mechanism involving role of ethylene receptors and ethylene response factors (ERF) was established well in many elite clones.
- Tree intercrops like Mahogany and Pathimugam did not affect the rubber plant growth and yield in a mature stand of rubber plantation in traditional region.
- Further to understand molecular mechanisms related to difference in



Spatial variability of Available Zinc in rubber growing soils of Meghalaya

ethylene response and latex flow among rubber clones, initiated a study with ethylene biosynthesis inhibitor.

- Efforts on popularising weekly tapping is giving promising results and many growers have adopted weekly tapping and are continuing the system as a powerful tool for reduction in cost of production of NR. Results from on-going trial on weekly tapping indicated the suitability of the tapping system for RR11 430 also.
- Controlled Upward Tapping under weekly tapping is promising to get sustainable yield from all kinds of old and senile rubber plantations, provided suitable bark is available.
- Under d3 frequency of tapping, it is observed that significant yield response to stimulation in clone RR11 422 and there is no significant yield response in RR11 414 and RR11 429.
- Tested and evaluated a model motorized tapping machine (BHRT) manufactured by M/s. Bholanath Precision Engineering (P) Limited, Mumbai and approval certificate issued. The machine has advantages of guarding injury and regulating bark consumption and can be used for basal panel tapping of rubber trees.

1.4.0 Use of remote sensing and Geographic Information System in NR plantation sector

- Geo-spatial mapping and updation of area of NR plantations in the traditional regions covering Kerala and Tamil Nadu were completed using satellite data as of March 2019. Area under traditional rubber growing regions in Kerala and Kanyakumari of Tamil Nadu was estimated at 6,06,425 ha of rubber plantations.
- Completed mapping and updating of NR plantations in Odisha and found that the rubber plantations are distributed in Mayurbhanj, Baleswar, Cuttack, Gajapathi and Dhenkanal districts of Odisha.
- Completed updation and mapping of existing NR plantations in East Godavari district of Andhra Pradesh based on the Satellite data as on April 2020 (S2A MSI) and estimated around 339 ha of rubber

plantations from the district (age of the trees 3 yrs and above).

1.5.0 Development of plant protection protocols

- A combined control of Abnormal Leaf Fall (ALF) and CCLS diseases could be achieved by prophylactic spraying of oil-based COC using mist blowers. A survey on the incidence of ALF disease carried out in 2020 disease season in Kerala and South Karnataka revealed low ALF incidence across different clones and regions. A study on the impact of ALF on growth and yield of four modern clones viz. RR11 414, RR11 422, RR11 429 and PB 260 indicated that the severity of ALF disease in general during 2020 was low. Among the clones, high leaf fall of 60-90% was recorded in unprotected blocks of RR11 414, RR11 422, RR11 429 and PB 260. The yield of the trees in the sprayed blocks continued to be significantly higher in clones of RR11 429, RR11 414 and PB 260.
- Defence signalling network from transcriptomic data of resistant and susceptible clones after challenge inoculation with *Phytophthora* were identified. Pathogenesis-related proteins were confirmed to be synthesised and accumulated with time to prevent invasion and establishment of pathogen. PR 2 (β -1,3-glucanase), PR 3 (chitinase) and PR 7 (endoprotease) were found to be released to plant intercellular space. Catalyse degradation of structural components in the cell walls of pathogen was established.
- Initiated the studies on association mapping to analyse marker-trait associations and QTLs linked with disease resistance against major pathogens. The study considered the use of natural populations or association panels with diverse cultivars for the purpose of recording more recombination events.
- In *Corynespora* leaf disease, expression analysis revealed diverse patterns and differential modulation of *Hevea* WRKY gene family in both resistant and susceptible clones in healthy and challenged conditions.

- Field crown budding was standardized in all modern clones (RRII 105, RRII 414, RRII 417, RRII 422, RRII 429 and RRII 430) at RRII Farm with FX 516 as crown. An average of 70% success obtained in the field crown budding.

1.6.0 Environmental protection and climate studies

- Initiated the climate suitability analysis for NR cultivation in the projected years 2050 and 2070 in 120 districts of NE India region and identified 105 districts in normal category followed by an additional 8 districts in the 10% deviation in suitability category. For the 2070 scenario, a mean increase of 19% higher favourable climate for rubber cultivation was predicted for 2050 projections in NE India.
- Studied El Nino and La Nina for accounting historical occurrence of strong and weak episodes and their impact on rainfall pattern in rubber growing regions of India. Seasonal rainfall was low during El Nino and high during La Nina episodes in the year of occurrence.

1.7.0 Socio-economic dimensions of the Indian NR sector

- Analysis of the demographic trend using historic data of new/replanting in the country between 1956-57 and 2018-19 found that the share of senile holdings consistently increased over the year and 35 % of the holdings were 25 years or older as of 2020-21 and this share will increase in the coming years if the present low planting tempo continued. The study forecasts that NR deficit is likely to increase drastically. Yet another eventuality might be migration of the industry to those countries that produce surplus NR quantities, but this will be contradictory to the spirit of Aatma Nirbhar Bharat Abhiyaan.
- The study on the impacts of tariff liberalisation under the Regional Trade Agreements (RTAs) on raw materials of rubber (19 tariff lines) and intermediate rubber products (11 tariff lines) found that among the raw materials, no tariff lines exhibited growth in import due to the tariff policies under the RTAs of India in the case of NR. The tariff policies of India

under the RTAs caused growth in import of five tariff lines of synthetic rubber (SR) and for reclaimed rubber (RR), the tariff concessions given under the RTAs was a major factor for the growth in import into India. The results of the analysis on intermediate rubber products indicated that more than the tariff policy of India under the RTAs, the growth in the domestic economy of India is the prime reason for higher import growth of items under the intermediate rubber products into the country.

- In the context of large share of mature NR holdings remaining untapped due to various socio-economic reasons, studied whether tapping rubber still be a profitable option under low price situation found that harvesting rubber is still a profitable for growers, provided weekly tapping system is adopted. Adopting self tapping and confining tapping to the peak yielding period will further enhance profitability especially when rubber price is low.
- A total of 421 rubber growers in Tripura belonging to nine Block Planting Units (BPUs) and two Group Processing Centres (GPCs) were surveyed to capture the decadal changes in the socio-economic characteristics of the tribal rubber growers in Tripura due to rubber cultivation. Data compilation and analysis is progressing.
- Study to find out the level of adoption of different rubber production technologies by the smallholders, farmers' perception and the factors influencing adoption of rubber production technologies for enhancing profitability is progressing.

1.8.0 Primary processing of latex and dry rubber and development of specialty rubber compounds

- A study on the effect of storage on properties of cup lumps especially on plasticity retention index (PRI) showed that there was an appreciable quantum of microbes in cup lumps and mixed coagulum from the beginning which did not subside even after one year of storage. The raw rubber properties including Plasticity Retention Index (PRI) are falling below the required standards on storage. Therefore the

storage and transportation of cup lumps could not be encouraged considering the quality point of view and human health.

- Developed a new and efficient process for complete recovery of high quality skim rubber with the skim coagulant SC-C. Procure skim latex coagulants (SC-1 and SC-2) from two local sources and compared the control skim coagulant. The skim coagulant SC-1 was found to be effective in complete recovery of skim rubber like the control skim coagulant.
- Prepared Latex-carbon black master batches in presence of non-ionic, anionic and cationic surfactants and attempted a reverse mechanism for preparation of latex-carbon black masterbatches. Test results of carbon-black masterbatches with new surfactant showed that most of the technological properties were improved due to new surfactant.
- Studies on the effect of cure system on the coupling efficiency of silanised silica (sSilica) with natural rubber identified some promising cure systems which showed excellent vulcanisate properties including abrasion loss.
- Standardised the conditions for NR blending with low proportions of high density polypropylene and worked out blend ratio. Prepared in-house balloon formulations F3 / F4 with NR cenex and other NR latex compoundings by varying sulphur to accelerator ratio.

2.0 Strengthening of Regional Research Stations (RRS) Scheme

2.1.0 Strengthening of Regional Research Stations in Other than North East region

HBSS Paraliar

- From the clone evaluation trials, four selections shortlisted from the last years' hybrids were pollarded and maintained for further evaluation.
- Initiated a study on the relationship between the size and weight of seeds on the vigour and selection of seedlings.
- Clones P 021 and P 010 were more vigorous among the 11 trial clones after 13 years of growth in the PCE 2008 (Phase I)
- Breeding orchards at Paraliar farm were

maintained by pruning and pollarding for the purpose of generating hybrids.

- Offered 63 advisory services to both small and large planters in the region.

RRS Padiyoor

- Evaluation of large number of clones of RR11 100, RR11 200, RR11 300, RR11C, IRCA, SCATC, PB series and polyclonal seedlings population are under progress in the region.
- Clones RR11 208 and RR11 600 are most promising clones in terms of growth, yield and adaptability and recommended as Category I clones.
- Clones SCATC 88-13, PB 260 and RR11C 102, IRCA 109 and IRCA 111 recorded better growth and yield and showed better adaptability.

2.2.0 Strengthening of Regional Research Stations in North East region

RRS Agartala

- Studies on Soil Fertility mapping of Tripura revealed that soil acidity is a major fertility constraint for rubber growing in NE region of India. Deficiency of micronutrients Zn and B was also widespread.
- Skipping fertilizer for two years for mature rubber did not adversely affect the growth and yield of mature rubber in a trial on fertilizer skipping.
- In clonal nursery evaluation of selected hybrids, highest yield (six seasons) was observed in three promising hybrids viz. AGHY07/11 (96.7 g/t/10t), AGHY07/64 (93.4 g/t/10t) and AGHY07/09 (92.5 g/t/10t)
- In Genotype X Environment interaction trial (2019), the girth ranged from 3 cm to 7.45 cm and height ranged from 60 cm to 307 cm during second year among 57 genotypes. Higher girth (at 30 cm height) was recorded in P/77 (7.45 cm) followed by IAN 873 (7.26 cm) and RR11 208 (7.22 cm).
- In large scale clone trial (2015) consisting 15 clones, (DD/AGR/6/16, DD/AGR/6/5, RRSA 114, RRSA 121, RRSA 585, RRSG 248, RRST 37, 98/38, 98/46, 99/1/24, 99/5/9, RR11 208, RR11 600, RRSA 98 & RRSA 315), Clone DD/AGR 6/5 showed highest girth (47.8 cm) followed

by DD/AGR/6/5 (42 cm) during sixth year compared to control clone RRIM 600 (39.8 cm).

- Ecological niche modelling with recent climate data indicated that annual average temperature in 2000 climate scenario ranged from -9.0 to 26.1°C in NE region. The projected annual temperature would be varying from -6.0 to 28.2°C in 2050 for the same region indicating the climate being warmer in NE region. Minimum temperature in winter season in this region is predicted to increase from 14.8°C in 2000 to 17.3°C in 2050 and the projected warmer climate of northeast may favour expansion of rubber cultivation.

- Analyzed 64 soil samples from small holdings and offered site specific fertilizer recommendation. Tested 281 latex samples for dry rubber content.

3.0.0 Technical Consultancy

3.1.0 Rubber product testing and development

Rubber product testing and advisory services:

Rubber products like bridge bearings, hawaai chappals rubber diaphragms etc., derived from NR/SR and thermoplastics were tested in the NABL accredited lab as per the relevant national and international standards (export market).

The major latex products tested include examination and surgical gloves, latex adhesives, latex thread, balloons, folly catheters, condoms etc. An account of the same is given below in Table 40.

Table 40. Number of samples tested and the revenue collected (2020-21)

No. of samples tested	718
No. of clients	403
No. of parameters analysed	2402
Consultancy letters/e-mail	2022
Extractable protein analysis	277
Hands-on training imparted	6
No. of test reports issued	718
Component analysis	58
Total revenue collected	• 29,41,451

Rubber product development: The division offers services to new entrepreneurs as well as existing rubber based industries for the

development of rubber products based on both synthetic and natural rubber. The quantum of product development during the year is given in Table 41.

Table 41. Number of Know-how transferred to industries

Name of products developed	Numbers
Adhesives	4
Automobile components	3
Expanded rubber sheets and soles	2
Fire resistant mats	6
Latex based dipped and foamed goods	2
Pre-cured tread, bonding gum and tube valve	3
Rubber based agro machinery components	4
Rubber based engineering components for railway, defence, BSF etc.	2
Rubber moulds	1
Rubber tiles	2
Total	29

NABL Accreditation: Successfully completed NABL online auditing on 10th October 2020 for Technical Consultancy Laboratory and received accreditation as per the latest NABL guidelines (ISO/ISE TC 17025-2017).

3.2.0 Externally funded major projects

Prepared 5 project reports for setting up of large-scale factories

- Fully automatic surgical gloves manufacturing unit for M/s Ravenbuck Latex & Surgicals, Rubber Park, Irapuram, Ernakulam.
- Commissioning of the intermix facility for rubber compounding at Common Facility Service Centre (CFSC), Manjeri
- Manufacture of medical gloves for M/s. Padak Rubbers (P) Ltd, Adoor P.O.
- Manufacture of medical gloves for M/s. Kannur Natural Rubber Products (P) Ltd, Kannur.
- As per the request of the entrepreneurs, project profiles and technical bulletins were issued on payment basis.

Funded Industrial projects- 6 nos

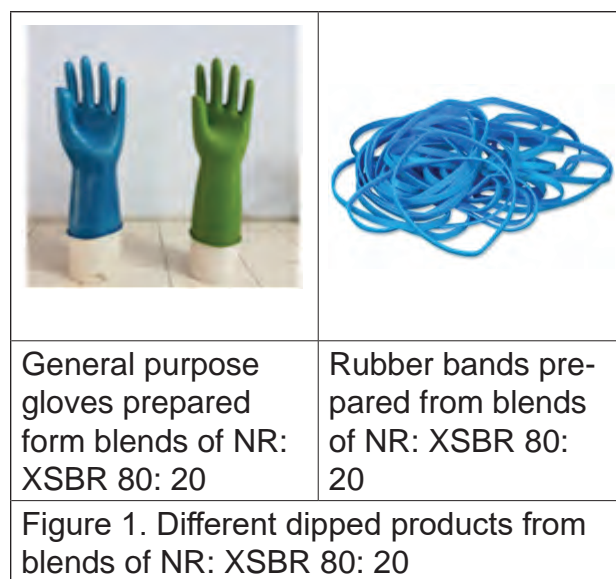
- Re-designed the automatic dipping plant and also provided the technology for the manufacture of household gloves for NEBEL India Pvt, Tripura.
- Plant lay-out was offered to M/s. Maximus Rubber Industries, a tread rubber manufacturing unit at Tripura.
- Construction of the dipping plant for the manufacture of disposable latex shoes (patented product) to M/s. DNNG and Company, Mumbai.
- Consultancy to M/s Kerala Minerals & Metals Ltd, Chavara, Kollam for the study on premature failure of rubber lining materials in chemical storage tanks.
- Transferred Manufacturing technology for Hawaii soles to an entrepreneur at Bangalore.
- Defects in the rubber compound were reported by M/s. BKT Tyres and provided the appropriate recommendations to overcome the problem.

3.3.0 Infrastructural development and implementation of new proposals

3.3.1 Rubber Products Incubation Centre (RPIC): RPIC was instituted in June 2020 at RRII. Innovative ideas of 8 companies were registered and all the projects are progressing very well. The ongoing Projects under RPIC are furnished below:

Project 1: Development of hand gloves and rubber bands for M/s EOC Polymers India Pvt. Ltd, Hariyana. Development of NR/SBR latex for dipping industry

This start-up programme was initiated to produce low-cost high performance gloves from blends of XSBR and NR. The project was further extended to the production of route trainer cups, rubber bands etc. Accordingly different blend propositions were prepared with XSBR grades and NR latex. Optimized the cure systems and evaluated the properties. Photographs of the products are given below:



Project 2: Natural rubber latex based products for footwear and lining of artificial limbs for M/s. Profoma (Unit of GLRARF Palakkad, Kerala).

Developed Orthotic insoles for diabetic and leprosy persons using 100% natural rubber (very soft ShoreA-15) and has minimum compression set (below 10%). The product has the required density and is cost effective. The clinical trials of the product were successfully completed at Vellore Medical College.



Figure 2. Orthotic insoles produced from 100 % natural rubber

Project 3: Low cost latex pre-vulcanization system by M/s Royal latex Products, Kerala

In this study a suitable cold vulcanization system is proposed for the manufacture of house-hold hose. Different combinations of accelerated sulphur cure system were tried under specified temperature. The cure state of the latex was followed through crosslink density measurements. Several trials were conducted and optimized the dose of chemicals and conditions for room temperature vulcanization.

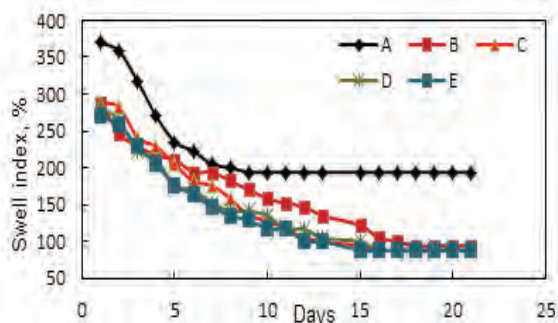


Figure 3. Change in crosslink density during room temperature vulcanization



Figure 4. Hand gloves produced from room temperature vulcanization.

Project 4: Development of high voltage electrical mats for M/s. Dolphin Rubber Industries, Industrial Development Plot, Kottayam

The work was initiated with EPDM rubber incorporated with non-black fillers. In order to impart flame retardancy appropriate fillers were included. The mat compound made accordingly was sent for testing at National Test House, Chennai for high voltage resistance test.

Project 5: Development of the rubber tiles from scrap nitrile gloves for M/s. John Traders LLP, Industrial Estate, Changanassery.

The proposal was to make rubber tiles using the scrap of the nitrile rubber gloves. In order to make the process environment friendly, a water-based adhesive was used to bind the gloves scrap. Developed tiles successfully passed the industrial trials and the know-how was transferred to the client.



Nitrile rubber glove powder

Figure 5. Flow chart for the production tiles from glove powder

Project 6: Adhesives for rubber lining of chemical storage tanks for M/s. Adhic Rubber Indurtries, Muttambalam, Kottayam

Very often the rubber compounds used for lining work in storage tanks are different in order to match with the liquid inside the tank. Here the adhesive plays an important role in bonding the rubber based lining material to the metal. Different formulations were tried in order to get



Crump after modified properties

Blocks with excellent raw rubber process

Figure 6. Production of block rubber with superior raw rubber properties from cup lumps

Project 8: Development of epoxidised natural rubber for M/s. Harrisons Malayalam Plantations, Kochi.

Epoxidised natural rubber is a chemically modified rubber having superior chemical and air retention properties. Besides ENR can accommodate silica more effectively than NR which has applications in tyre and similar products. Prepared ENR 25 and 50. The characterization of the same is in progress.

3.3.2 REACH Compliance Laboratory for imported rubber products.

Constructed a new laboratory for the **REACH** analysis of rubber products. Procured two major machines required for REACH laboratory viz. GCMSMS and ICPMS through GeM and installation of the instruments is in progress.

3.4.0 Research Projects, Guidance, Trainings, Factory/ Industrial visits and Webinars

3.4.1 Research projects: Seven research projects are being conducted based on the requirement of small scale and medium scale industries.

3.4.2 Guidance: Assisted three Ph.D. students in conducting Doctorate programmes and another three Post graduate students from

better bonding between the rubber based lining material and the metal.

Project: 7 Production of block rubber with superior raw rubber properties for M/s. Kavanar Latex, Pala, Kerala.

A process modification and use of good quality raw materials are proposed for the production of block rubber. Experiments were conducted in this line and have got block rubber with excellent raw rubber properties

M/s. Central Institute of Petrochemicals Engineering & Technology (CIPET) for project work.

3.4.3 Hands on Training : Eight programmes conducted in 2020-21

- Training on “Manufacture of Exercise Band” for M/s J K Polymers, Punjab.
- One day specialized training to M/s. NHMP Multy Production Industries, Tripura in the production of fluorescent rubber bands.
- Training on “Manufacture of carpet backing” for M/s Oswal Polymers, Kottayam.
- Training on “Orthodontic rubber band preparation, which complies with the FDA regulations” to M/s Periyar Rubber Band.
- Specialized training on “Protein detection in rubber products” to M/s Lenora Gloves (Private) Ltd.
- Training on “Industrial gloves manufacturing” Shri. Hydross T A, Kothamangalam and on “Making Rubber band” to Smt. RS Thankachi, Trivandrum.
- Training on “Glove manufacturing and latex coating on gunny jute bag” to M/s Nambyattukudi Agro Industries, Kalady.

3.4.4 Factory visits/industry meets and Technology demonstrations

- Officers participated in the seminar on start-up programme by Travancore Management Association.
- Delivered an online talk about “Rubber products manufacturing in Kerala: challenges and opportunities” in a webinar by MSME, Thrissur on 23.07.2020.
- Attended the webinars on ICPMS and GCMS hosted by M/s. Agilent and M/s. Thermofisher on 22/07/2020 and 30/7/2020 respectively.
- Attended webinar on “Natural Rubber Gloves Manufacturing: Prospects and Concerns” conducted by RTI on 11th September 2020.
- Attended online technology demonstration on “Tyre recycling using ultra high pressure water” on 17th November 2020 organized by C. Ganga & NMCG.
- Officers attended online technology demonstration “Latest trends on Tyre Retreading” on 18.12. 2020 organized by RTI-IRI.

4.0.0 Scientific Advisory Committee (SAC) Recommendations

- During the reporting year, the following five recommendations were approved by SAC:
- Recommended Calopogonium caeruleum as an alternate cover crop in rubber plantations. This leguminous cover crop can be established under partial shade also during later immaturity period of rubber.
- Recommended a new water based combination fungicide with the formulation

Highlights of achievements

- RRII provided Advisory services to 4,694 stake holders and analyzed 104 water samples during the reporting year.
- RRII generated an Internal Extra Budgetary Resources (IEBR) fund of Rs. 43.14 lakh towards consultancy and testing fees during the reporting year.
- RRII estimated the upset value for around 40,000 rubber trees in 19 blocks of M/s State Farming Corporation of Kerala Ltd, Punalur under Consultancy service.
- Scientist from Economics Division successfully completed his Doctorate thesis on the topic “India’s Tariff Policies on Rubber and Rubber Products under Regional Trade Agreements: An Analysis of Outcome, Challenges and Policy Implications” and was awarded Ph.D. by M/s Gokhale Institute of Politics and Economics, Pune.

of 5% Pyraclostrobin + 55% metiram (trade name Mantram) at a concentration of 1g/L can be effectively used to control Corynespora leaf disease in rubber plantations.

- SAC accepted the findings that latex can be pre-treated with suitable agents (irrespective of whether LATZ or HA latex) prior to adding preservatives. Pre-treated latex can be stored for up to six months and good quality RSS can be made from it.
- SAC accepted the innovation of a simple, quick and accurate method for DRC determination of field latex using 70% isopropyl alcohol (Medispirit) as the coagulant. The new method was much faster and cheaper than the conventional acid coagulation method and both with identical results.
- Recommended Motorola spray oil supplied by M/s Quebec Petroleum Resources Ltd., Gujarat, for use as a carrier of oil-based copper oxy-chloride in rubber plantations.

5.0.0 RRII Scientific Seminars / Webinar / Workshop / Research Publications

- Conducted 6 internal scientific seminars in which 9 research papers were presented by its scientists and also, delivered 4 general talks.
- Conducted webinars on topics “Latex products manufacturing” and “Overview of the rubber sector and scope for entrepreneurship” on 20th August 2020 as part of the Entrepreneurship Development Programme in Rubber Sector in Kerala.
- Conducted a one-day workshop on “Rubber product manufacturing” for students of CFSC, Changanassery.
- RRII published 68 Research publications under various topics in the rubber sector.

PART VI

TRAINING

Training is one of the major functions envisaged under the Rubber Act. An exclusive Department for training was established in 1994 to undertake the growing need for training and skill development of all stake holders of the rubber sector, on account of the development of rubber industry in the country. The mandate of the Rubber Training Institute is human resource development by providing state of the art technological training and developing adequate skill in all sectors of the rubber industry comprising of rubber production, processing, product manufacture, marketing and consuming sectors. The scale of operation in all these sectors is relatively low and since mechanization/ automation is possible only to a certain extent, the requirement of human resource is high. Updating technical knowledge and acquiring adequate skill are hence very essential for the sustainability of each sector. The department has thus a significant role in the development and sustainability of the Indian rubber industry.

Under the Scheme, RTI organizes various training programs to update the technical knowledge and to address the skill gap in various sectors of the rubber industry value chain. The Institute also trains students of various academic Institutions in Plant Science and Rubber Technology. The human resource development activities of the Rubber Board are also carried out by the RTI. The Institute also arranges external training to the employees of the Board in various Institutions of Excellence as per specific training needs at the work front. Every year more than 75 different course modules of widely varying subjects and duration are designed as per the requirements of the client groups.

For the economic development and social up-liftment of the of weaker sections of the society, special capacity building training is proposed for tribal farmers/unemployed youth of the SC/ST communities under the SC SP/TSP scheme to make them employable in rubber sector and earn their livelihood. RTI is an ISO

9001-2015 certified establishment committed to meet the training needs of the Indian rubber sector including that of Rubber Board to ensure availability of competent and skilled personnel.

In addition to the ongoing scheme on training ,RTI has undertaken external funded projects for skill development under Pradhan Manthri Kausal Vikas Yojana (PMKVY) scheme in convergence with Ministry of Skill Development and Entrepreneurship (MSDE), Govt. of India and employability enhancement programmes for academic students under Additional Skill Acquisition Programme (ASAP), Government of Kerala.

Rubber Training Institute has collaborated with various Institutes, Industries, Universities and Professional bodies, Government / Private Departments, etc. for promoting entrepreneurship and to impart training and skill development.

RTI continues to be the nodal agency for capacity building and skill development for all stake holders of the rubber sector and contributed significantly despite the challenges posed by the Covid-19 pandemic. RTI has taken technology initiative to switch over the calendared programmes to virtual mode in the first month itself of the reporting year and could organize 160 programmes, mostly in online mode, attended by 6475 participants which is much higher than the target. However, the ongoing external funded projects could not be pursued since the concerned Central and State Govt. Bodies suspended all programs on account of the Covid-19 pandemic.

With the unprecedented circumstances due to Covid-19 pandemic, RTI accepted the challenges positively and seamlessly adapted to online mode for almost all the mandated activities. Further, the Institute continued to work adhering to the Guidelines and SOPs prescribed by the State Govt. and the Govt. of India from time to time with full commitment.

The Institute has also taken special efforts to implement the recommendations of the MTEF

external evaluation committee like conducting more programmes in NE region, launching of long duration programmes and renaming the Institute as National Institute for Rubber Training. To address these, rigorous out station trainings were conducted in online mode translating to regional language for the benefit of the participants from all the seven States having rubber cultivation in NE region. Also launched two Certificate Courses of three months duration in January 2021 viz., Molecular Biology and Biotechnology Techniques (MBBT) and Rubber Product Manufacture (RPM) for the employability enhancement and entrepreneurship development of students from the concerned disciplines. The approval for renaming RTI as National Institute for Rubber Training has also been accorded by the Ministry of Commerce, Govt. of India.

6.1 Objectives of the Institute

- Update the technical and managerial competitiveness of all stakeholders of the rubber industry
 - Improve cost-quality competitiveness in all sectors
 - Transfer of location specific farming technologies through regional programmes
 - Improve business skills of various clusters like RPSs, Rubber Marketing Co-operative Societies, Rubber processing and Product manufacturing groups, industry clusters MSMEs, SHGs, Tappers Bank, Kudumabasree, etc. through capacity building/leadership development programmes - All being in the unorganized sector.
 - Address the skill shortage/skill gap in the rubber plantation, processing and product manufacturing sectors through massive launching of skill development/capacity building programmes.
 - Transfer of location specific farming technologies through regional programmes.
 - Promotion of additional income generation activities in rubber plantations.
 - Empowerment of weaker community and women in rubber sector.
- Employability enhancement and entrepreneurship development through curriculum linked training/skill development of academic students.
 - Promotion of value addition through Entrepreneur Development Programmes (EDPs) focusing unemployed youth/interested persons.
 - Improve global competitiveness of MSMEs by providing training in advanced areas and technologies.
 - Develop resource personnel by up-skilling through ToT programmes.
 - Faculty improvement programmes through deputation in national and international Institutes.
 - Update technical/managerial competence and improve efficiency of Rubber Board employees.
 - Sharing of knowledge and skills through international training programmes.

6.2 Structure of Rubber Training Institute

The Institute executes the programmes through the following four Divisions:

1. Rubber Plantation Development (RPD)
2. Rubber Industry Development (RID)
3. Rubber Extension Development (RED)
4. Human Resources Development (HRD)

Programmes of all divisions are organized based on the Annual Training Calendar, which is prepared in advance and programmes are conducted as per the schedule for various target groups. Besides, programmes are also customized as desired by the clientele and organized collaborative focused programmes. Being adjacent to the Rubber Research Institute of India, RTI is benefited by the excellent laboratory and library facilities of RRII.

The Institute has three demonstration laboratories for i) latex products manufacturing, ii) dry rubber products manufacturing and iii) quality control of latex and dry rubber based compounds and products. It also has state of the art training halls, computer laboratory, library, well equipped auditorium, hostel and canteen. In addition to the core faculty of four senior officers of RTI, an

internal faculty bank of around 125 nos. including scientists, technologists, engineers, extension officers, technical personnel, senior officers of Rubber Board specialized in various fields of rubber sector is maintained by the Institute. An external faculty bank is also maintained for outsourcing expertise in specific areas and to address shortage of internal faculty as per need. Also a faculty bank of about 350 certified trainers (for imparting ToT) are maintained for the external funded skill projects.

Target groups:

Rubber growers – small, medium and large growers/workers/tappers
Growers from NE/NT regions
Estate Managers/supervisory staff /workers
Rubber Producers' Societies/RPS Companies
Rubber Marketing Societies
SHGs/Tappers' Bank/Kudumbasree
Rubber Dealers
Rubber processors
Quality Control Personnel – Lab Chemist/ Assistants
Exporters of rubber and rubber products
Rubber products manufacturers and Industry Clusters
R&D Institutions/Defence personnel
Entrepreneurs/unemployed youth
Rubber wood processors and exporters
Government Officials / Agriculture Officials / Officials from Public Sector Institutions mainly from NE/NT regions
Production managers
Quality control managers
Women, SC/ST personnel
Academic students
Faculty from various Educational Institutions
Employees of the Rubber Board
Overseas participants

6.3 Methodology

Course objective is fixed based on the needs of clientele and accordingly course content is developed. Further, modifications are made, if required, based on the need analysis of the participants on the first day. Course materials

and training aids are prepared and pre/ post evaluations are carried out to measure the level of knowledge transfer. Innovative methods such as case study, brainstorming sessions, panel discussions, group work, management games, success story sharing etc., are used besides lectures by expert resource persons, interactive discussions and classroom presentations. RTI training programmes extensively use audio-visual aids and field / factory exposure visits are the integral part of training programmes.

However, due to the Covid- 19 Protocols, most of the programmes were delivered in online mode and hence there was only limited scope for fully adopting the above methodology during the year. Special efforts were taken to demonstrate all field and laboratory practices with video support in virtual mode.

6.4 External funded projects for Skill Development

Apart from the calendared programmes, RTI undertook the following external funded projects for skill development.

6.4.1 Rubber industry sector: Collaborative project with ASAP, Govt. of Kerala

Ongoing collaborative projects with Additional Skill Acquisition Programme (ASAP), Higher Education Department, Government of Kerala are being continued with the following courses to enhance employability of students:

- Lab Chemist Course (Regular and Summer Skill Skool) for B.Sc. students
- Lab Chemist -Regular batches for plus two students

During the year 2020–21, ASAP has suspended all the programmes on account of the Covid-19 pandemic and hence, the programmes could not pursue for two batches with 58 students.

6.4.2 PMKVY Skill Project, Government of India – Recognition of Prior Learning (RPL) training for rubber plantation sector

The Institute has been launching the PMKVY-RPL Project from 2016 onwards in collaboration

with Rubber Production Department of the Board under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) Guideline 2.0, Ministry of Skill Development and Entrepreneurship (MSDE), Govt. of India to address the skill gap in the job roles of latex harvesting technology and rubber processing towards increasing production and improving quality of sheet rubber (RSS), the major processed form of NR in the country. During the period 2016–2020, the RPL Project was implemented in 13 states benefitting 62,000 participants.

In the reporting year, the batch creation of 172 batches for 5,596 persons has been completed in the SIP. However, could not conduct the programmes due to suspension of all programmes by NSDC in the context of the wide spread of Covid-19 pandemic and the lockdown imposed by the Central and State Government. RTI has completed all documentation works of the RPL Project undertaken in 2019-20 and also registered the RPL Project with Rubber Board as PIA under the PMKVY 3.0 Scheme for the upcoming year targeting 11,000 beneficiaries in 14 states for plantation job roles.

6.5 Training for SC/ST personnel under Scheduled Caste Sub Plan (SCSP) and Tribal Sub Plan

For the economic development and social upliftment of weaker sections of society, special

capacity building programmes were conducted and imparted skill in tapping and processing, ancillary income generation and entrepreneur development.

6.6 Academic programmes – Three months Certificate courses were commenced during January 2021 in the following fields :

1. Molecular Biology and Biotechnology Techniques (MBBT)
2. Rubber Products Manufacture (RPM)

Course fee of Rs.21,000 +GST per participant was collected for the above programmes. RTI proposes to launch one year Post Diploma and PG Diploma Courses in future as an initiative for self-sustenance.

6.7 Training programmes organized during 2020 – 2021

Summary of training programmes organized during the year are furnished in Table 42.

External funded skill projects: (PMKVY –RPL Project, GoI–Plantation and Industry sector)

1. Created 172 batches in the SIP (Skill India Portal), targeting 5160 for 2020-21.
2. Application was submitted to NSDC with a target of 11,000 nos. for 2021-22. Approval was not received from NSDC due to spread of Covid -19 pandemic.

Table 42. Highlights of Training Programmes conducted by RTI during 2020–21

Sl. No.	Programmes	No. of trainings	No. of participants	No. of mandays
A. Calendared programmes of RTI				
1	Plantation Development Programmes	32	1,281	2,051
2	Rubber Industry Development Programmes	46	847	1,949
3	Rubber Extension Development Programmes	34	2,512	5,892
4	Human Resource Development Programmes	23	962	1,038
5	Webinars	5	450	225
Sub total		140	6,052	11,155
B. Special programme under SCSP and TSP				
6.	Special training for SC/ST beneficiaries	20	423	1,414
Grand total (A) + (B)		160	6,475	12,569

6.8 Rubber Plantation Development (RPD) Division

The RPD Division focuses on imparting scientific knowledge for proper location-specific, cost effective rubber cultivation practices to achieve increased production and productivity at reduced cost without compromising quality. Latest research recommendations in the fields of crop improvement, crop protection and crop management were given due thrust in the programmes with a view to maximize production and optimum use of available land and ancillary income generation for small growers. Due importance was given for productivity enhancement through latest developments in latex harvest technology and intercropping. Emphasis was also given on low frequency tapping/weekly tapping, online fertilizer recommendation, pests and disease management and region specific advisory of planting material in all regions. The programmes which required field demonstrations and skill updating were offered in offline mode. All the above programmes were conducted on paid mode at subsidised rates.

The Division conducted 34 programmes benefitting 1,310 participants for 2,283 man days in online/offline modes. The topics covered include mainly rubber cultivation and processing, latex harvest technology, pest & diseases management, spraying & maintenance of sprayers, clones & clone identification, good agricultural practices for sustainable rubber production, rainguarding, manuring, low frequency and controlled upward tapping, intercropping, planting and upkeep, bee keeping etc.

Hands-on training in Biotechnology and Molecular Biology to students from Life Science and Biotechnology stream, online training on rubber production technology and fertilizer recommendation to fertilizer dealers in collaboration with Regional Agriculture Technology Training Centre (RATTC), ATMA, Ernakulam and capacity building programmes of 8 days duration on latex harvest technology to SC/ST beneficiaries were also undertaken by the Division. Another initiative was launching of new certificate course in Molecular Biology and Biotechnology Techniques for three months

towards employability enhancement and entrepreneurship development of unemployed Graduates/Post Graduates in plant science disciplines.

The activities of the RPD Division are grouped under seven major heads.

6.8.1 Rubber Plantation Development Programmes

- i Short term training on Rubber cultivation for small growers: To impart scientific knowledge in planting operations, crop harvesting and processing.
- ii Short term training on Rubber cultivation for estate sector: To impart scientific knowledge in rubber cultivation to estate managers and interested persons.
- iii Advanced training on Rubber cultivation and plantation management: (need based) To impart latest developments in rubber cultivation and plantation management.
- iv Specialized training on Rubber plantation management: Need based programme to impart knowledge on plantation management for reducing cost of production.
- v Training in rubber cultivation for Government officials/agricultural officers of state
- vi Training on ISO 9000 QMS for estates / RPSs and RB promoted companies
- vii Specialized training on testing of fertilizer and organic manure

6.8.2 General Training Programmes

Focused training in various aspects of rubber cultivation and processing are organized as per schedule and on need basis.

1. Beekeeping in rubber plantations
2. Mushroom culture
3. Spraying and maintenance of sprayers
4. Biogas generation from effluents
5. Latex harvest technology
6. Nursery management
7. Pests and disease control

8. Budding techniques and Root trainer plants
9. Modern clones and clone identification
10. Rubber wood based furniture making
11. Good agricultural practices (GAPs) for sustainable rubber production
12. Soil and water conservation in rubber plantations
13. Rainguarding
14. Low frequency tapping (LFT) and Controlled Upward Tapping (CUT)
15. Manuring
16. Products from honey and bee wax
17. Intercropping
18. Planting and upkeep

6.8.3 Regional programmes

- 1 Short term training on rubber cultivation for growers from North East and Non Traditional (NT) regions
- 2 Training for marginalized group: To impart training on beekeeping towards ancillary income generation for growers from different locations in NT regions.

6.8.4 Training programmes for students

- 1 Crop production and plantation management in rubber
- 2 Project work in rubber plantation

- 3 Need based training for students from Plant Science and Biotechnology
- 4 Specialised training in testing of soil / organic manure / fertilizer (need based)

6.8.5 Sastradarshan Programmes

Visit cum interaction programmes for students from Agriculture/VHSC/Botany disciplines were organized for familiarizing with the activities/laboratories and also to have interaction with experts in RTI and RRII, Kottayam.

6.8.6 International Training

- 1 Advanced training on rubber cultivation and Plantation management (need based)
- 2 Overseas training on rubber cultivation (need based)

6.8.7 Special training to SC/ST members under SCSP/TSP Scheme

Empowerment programmes for uplifting the socio-economic status of resource poor SC/ST growers in remote areas through employment generation, self tapping, ancillary income generation and promotion of entrepreneurship.

6.8.8 Certificate course in Molecular Biology and Biotechnology Techniques (MBBT)

New three-months certificate course in Molecular Biology and Biotechnology Techniques launched. This course in Biotechnology balances theoretical understanding with hands - on practice in specific laboratory skills.



Three months Certificate course in MBBT

Table 43. Training imparted under RPD Training Division: 2020 – 21

Course Code	Course Title	Participants	Duration (days)	No. of batches	No. of Participants	Man days
a. Rubber Plantation Development Programmes						
RC 01	Short term training on rubber cultivation	Growers/interested persons	3 – 5	3	37	119
RC 02	Short term training on rubber cultivation for estate sector		5	1	5	25
Sub total				4	42	144
b. General Training Programs						
GT 01	Training on Bee-Keeping in rubber plantation	Growers /interested persons	1	5	526	526
GT 03	Training on Spraying and maintenance of sprayers	Growers/interested persons	1	1	2	2
GT 05	Latex Harvest Technology	Growers /interested persons	2	2	46	92
GT 07	Pest & Disease control		1	2	88	88
GT 08	Budding techniques and Root trainer plants	Growers/interested persons	1	2	10	10
GT 09	Training on modern clones and clone identification	Rubber Growers / Farmers	1	1	12	12
GT 11	Good agricultural practices for sustainable rubber production	Growers/interested persons	1	1	35	35
GT 14	Rainguarding	Rubber Growers / Interested persons	1	1	53	53
GT 15	Low frequency tapping and Controlled Upward Tapping		1	2	69	69
GT 16	Manuring in rubber	Growers/interested persons	1	2	155	155
GT 18	Intercropping in rubber		1	2	64	64
GT 19	Planting and upkeep		1	2	75	75
Sub total				23	1,135	1,181
c. Training programme for students						
ED 10	Training on Plant Science / Biotechnology	M Sc Biotechnology / Botany students	3	2	29	87
d. Certificate Course (Three months) – MBBT						
	Molecular Biology and Biotechnology	Fresh graduates/ PGs/ Entrepreneurs/ Research scholars	3 months	1	12	576
e. Regional Training programs						
GT 01	Training on Beekeeping in rubber plantation	Growers/ Interested person of NT region	1	1	30	30

DT 01	Rubber production technology and fertilizer recommendation for rubber	Dealers – NTI, ATMA and RATTTC (Collaborative with RATTTC & ATMA)	1	1	33	33
Sub total				2	63	63
f. Special programs under SCSP & TSP						
DT 06	SCSP & TSP – Training on Latex Harvest Technology	SC/ST growers (Out station)	8	2	29	232
Grand Total				34	1,310	2,283

6.9 Rubber Industry Development (RID) Division

The Division addresses training needs of processing, product manufacturing, marketing and consuming sectors of rubber industry. Major thrust areas are technical updation, quality improvement and cost reduction which indirectly contribute in improving the marketability of NR. The Division also conducts entrepreneurship development and educational programmes towards employment generation and in meeting the technical as well as skilled manpower requirement of rubber industry. RTI has been collaborated with professional bodies and universities in India for conducting advanced programmes for industry personnel and academic students respectively.

Division conducted 46 programmes benefitting 847 participants for 1949 man days. The major areas focused were EDPs targeting NRIs and unemployed youth, technology updation programmes for the benefit of existing industries and quality improvement and market development programmes. All the regular curriculum linked programmes of students from various Universities/Colleges/Institutions for hands on training at the Institute were cancelled due to the restrictions imposed on educational activities at their end.

The Division could not pursue the external funded projects of M/s. Additional Skill Acquisition Programme, Higher Education Department, Government of Kerala and the PMKVY-RPL Project in industry job roles since the concerned bodies have suspended all programmes during the year 2020-21 due to the spread of Covid-19 pandemic and subsequent lock down imposed by the Government.

Under international programs, technical support was extended in Rubber Technology for an ongoing project to M/s HMT (India) Ltd., Bengaluru under Ministry of Heavy Industry & Public Enterprises for establishing Government of India aided project on “Setting up of Indo-Myanmar Industrial Training Centre at Thaton, Myanmar” towards bilateral co-operation.

Activities of the Division are grouped under nine major heads as follows:

6.9.1 Rubber Processing and Quality Improvement Programmes

1. Short term training on rubber processing and quality control: To provide scientific knowledge and skills for processing the crop into various marketable forms and its quality control.
2. Training on sheet rubber processing and grading: To impart scientific knowledge in rubber processing and grading.
3. Specialized training on processing of block rubber/cenex: (need based) To impart training in processing and skill development / updation in testing of ISNR, centrifuged latex (cenex) and creamed latex.
4. Specialized training on testing of ISNR/SR/RR/latex/rubber chemicals (need based).
5. Training on effluent treatment and pollution control (need based): To impart awareness on pollution control and effluent management.
6. Training on rubber wood processing and quality control (need based).
7. Training on effluent/water analysis.

8. Training on laboratory management system (NABL).
9. Training on Total Quality Management and ISO 9000 Quality System (need based) :To impart training in management of quality for ensuring consistency.
10. Training on testing of DRC for skill development.

6.9.2 Rubber Industrial Development Programmes

1. Short term training on latex goods manufacture: Entrepreneurship development through imparting scientific knowledge & skills in manufacture of latex based products.
2. Short term training on dry rubber goods manufacture: Entrepreneurship development through imparting scientific knowledge and skills in the manufacture of rubber products using dry forms of NR and SR and testing of rubber products.
3. Advanced training on rubber products development and manufacture: Need based programme to impart training in advanced techniques of rubber products manufacture and product development to improve competency.
4. Specialized training on testing and quality control of rubber and rubber products: Need based programme to impart knowledge and develop skill in testing of rubber and rubber products.
5. Specialized training on latex and dry rubber products: Need based programme to impart training in manufacture of specific products including its testing, quality control and recent developments.
6. Training on entrepreneur development in rubber Industry (need based): Orientation programme to develop entrepreneurs in rubber based industry.
7. Specialized training on product analysis/ reverse engineering.
8. Refresher course on Latex technology (need based).

9. Refresher course on Rubber technology (need based).
10. Specialized training on Testing and quality control of rubber products / product analysis and reverse engineering (for defence personnel).

6.9.3 Market and Export Development Programmes

1. Short term training in marketing and export management of natural rubber
2. Training in export management of natural rubber

6.9.4 Training Programmes for Students

Programmes are arranged in rubber product manufacture and testing for Diploma/ PG Diploma/B.Tech./M.Tech./B.Sc./M.Sc. students of various Universities/ Colleges.

1. Short term training in rubber products manufacture and testing
2. Training in Rubber Technology for B.Tech. / M.Tech. students
3. Training in Rubber Technology for M.Tech. students
- 3 Specialized training in Rubber Technology for P.G.Diploma students(need based)
- 4 Specialized training in Rubber Technology for students
- 5 Faculty improvement programme in Rubber Technology (need based)
- 6 Project work in Rubber Technology

6.9.5 Outstation Training Programmes:

Need based programmes on entrepreneur development and quality control and other topics are organized for industry.

1. Orientation training in Rubber based industry
2. Training in quality control of marketable forms of NR

6.9.6 Sastradarshan Programmes

Visit cum interaction programmes for students in Rubber Technology from VHSC/ Diploma/B.

Tech/M.Sc/B.Sc. disciplines are conducted for familiarizing with the activities/ laboratories and also to have interaction with experts in RTI and RRIL.

6.9.7 Collaborative Programmes

Advanced programmes on specific topics in collaboration with professional bodies are arranged as need based.

1. Advanced training in rubber products manufacture
2. Orientation programme cum placement drive
3. Trainers' training programmes
4. Entrepreneurship development programmes

6.9.8 International Training

Advanced training in Rubber products manufacture and testing: Need based programmes to impart and share knowledge on latest developments in rubber products manufacture and product development.

6.9.9 External funded Project

6.9.9.1 Additional Skill Acquisition Programme

(ASAP) project: The Division has been undertaking collaborative project with ASAP for conducting "Lab Chemist Course" – Regular for B.Sc. first year completed students (Round the year programme) from 2016 onwards followed by placement support to needy candidates.

6.9.9.2 PMKVY – RPL industry project: for re-skilling /up-skilling of employees of rubber based industries to address the skill gap in the job roles of Junior Rubber Technician, Mill Operators, Compression Moulding Operators, Sorting / Packing Operators.

Presently the above two programmes were suspended due to COVID-19 pandemic.

6.9.10 Certificate course in Rubber Products Manufacture (RPM)

The Division has launched a new three months Certificate course in Rubber Products Manufacture during January 2021. The course covers both theoretical knowledge and practical skills in major areas related to rubber products manufacturing technology.

Achievements and outcome of the RID Training Division are provided in Table 44.

Table 44. Training imparted under RID Training Division during 2020 – 21

Course Code	Course Title	Participants	Duration (days)	No. of batches	No. of participants	No. of man-days
a. Rubber processing and quality improvement programmes						
RP 02	Training on sheet rubber processing and grading	Growers/Processors/ Dealers/consumers/ Entrepreneurs	2	4	60	120
RP 03	Specialized training on processing & grading of RSS	Entrepreneur/ Technical persons	1-3	2	4	6
RP 04	Specialized training on Testing of Cenex/NR/DRC	Entrepreneur /Technical persons from rubber Sector	3	7	7	19
RP 10	Testing of Dry Rubber Content – Certification of testing personnel		2-3	7	40	119
RP 09	Training on TQM and ISO 9000 Quality system	Officials from M/s R1 International (I) P Ltd.	1	1	13	13

			Sub total		21	124	277
b. Rubber Industrial Development Programmes							
RM01	Short term training on latex goods manufacture	Entrepreneurs/traders/ manufacturers/ interested person	3-5	5	120	426	
RM02	Short term training on dry rubber goods manufacture	Entrepreneurs/ traders/ manufacturers/ consumers	3-5	3	44	148	
RM05	Special training on technology transfer on latex dipped goods for medical field / latex adhesive	Entrepreneurs / Industrialists	2-3	2	2	5	
	Licensing procedure on transaction of NR	Dealers / processors/ manufacturers	1	1	17	17	
			Sub total		11	183	596
c. Training Programmes for students							
ED01	Short term training on rubber products manufacture & testing	B.Voc. students / B.Tech./M. Tech/M.Sc. Polymer students	3-5	5	60	168	
d. Market and Export Development programmes							
MD 01	Training on market and export management of NR	Rubber dealers / processors/ exporters and interested persons	2	1	8	16	
e. Outstation Training Programmes							
DT 01	Training on Quality control of different marketable NR forms	Officials from M/s R1 International (I) Pvt. Ltd.	1	1	13	13	
DT 03	Entrepreneur development in rubber sector in Kerala	Entrepreneurs / interested persons	3	1	47	141	
DT 04	Training on processing and grading of sheet rubber (RSS)	Entrepreneurs / traders/ manufacturers/ interested persons	2	1	147	294	
			Sub total		3	207	448
f. Certificate Course							
Rubber product manufacture		Diploma /Graduates / Engineers/ Research scholars/ students	3 months	1	7	314	

g. Webinars					
NR gloves manufacturing –prospects & concerns(RTI – IRI collaborative) – International webinar	Entrepreneurs/ interested persons	0.5	1	137	69
Business opportunities in value added products using rubber plantations organized by Kerala Institute for Entrepreneurship Development (KIED)	Entrepreneurs from Kerala (online awareness programme)	0.5	1	47	24
Scope of rubber based industries – in association with DIC, Kottayam	Entrepreneurs/ interested persons	0.5	1	42	21
RTI-IRI collaborative workshop on latex trends in tyre retreading	Processors, Dealers, Exporters/interested persons	0.5	1	32	16
	Sub total		4	258	130
Grand Total			46	847	1,949

6.10 Rubber Extension Development (RED) Division

The main mandate of the Division is organizing programmes for transfer of technology and skill development among clusters of small and marginal rubber growers on various aspects of rubber cultivation mainly in decentralized mode at RPS work fronts. The topics calendared for the year were monsoon precautions in rubber plantations, tapping corrections, rainguarding & CUT, scientific application of fertilizers, collection of latex and field coagulum, preservation of field latex, sheet rubber processing and grading, intercropping in rubber plantations, rubber diseases, pest control and recent developments in corynespora leaf disease management, apiculture, productivity enhancement in rubber plantation etc. Special empowerment programmes for SC/ST beneficiaries, capacity building programmes for Director Board Members of RPSs and refresher training for members of Rubber Tappers Bank (RTB) were also undertaken by the Division during the year.

Thrust was mainly on productivity enhancement, additional income generation and cost reduction practices. Online training programmes were conducted exclusively for NT/NE areas in local languages for creating awareness among the growers and other stakeholders for the adoption of scientific and

cost effective practices towards sustainability of the rubber plantation industry, in the context of fall in price of NR coupled with other challenges.

During the year, the Division could organize 52 programmes benefitting 2906 participants for 7074 man days. All these programmes had a remarkable impact on business modalities of RPSs and reasonable increase of business spectrum of Rubber Board promoted Companies involved in the value chain. All the programmes under the Division are offered to marginal/ small growers and SHGs on free/sponsored/ collaborative mode.

The Division has been successfully implementing the external funded PMKVY RPL Skill Project, Government of India for the rubber plantation sector in collaboration with the Rubber Production Department of the Board from 2016 onwards.

The programmes conducted by the Division are grouped as shown below:

6.10.1 Training for RPS sector

Need based programmes for Directors of RPSs for leadership qualities and managerial skills enabling capacity building of the societies were imparted. The main aim is to improve the skills in entrepreneurship, business management, accounting, collective decision making, problem solving and other leadership qualities as well as

technical capacity building.

Programmes offered for RPSs are:

1. Training in Business Management Skills to President/Director Board members of RPS.
2. Training for Collection Agents of RPS:- To develop collection agents of RPSs as social change agents in RPSs.
3. Training for RPS/SHG/GPC workers in business management skills
4. Refresher training to RTB members to enhance the skill and scientific knowledge of tappers of RTBs formed under RPSs.
5. Refresher training to Kudumbasree leaders/ members to enhance the skill and capacity in tapping and other cultural operations.
6. Refresher training imparted to trained tappers selected and nominated by RPD to create panel of trainers attached to each RO to facilitate LFT methodology in the field.

6.10.2 Certificate course in Apiculture

The one year certificate course in apiculture launched in collaboration with RPSs for promoting entrepreneurship and generating ancillary income from rubber plantations, which was found to be successful. Hence, the programmes were extended to more RPS centres in association with regional offices concerned to develop qualified beekeepers. During the year 2020-21, 11 batches were organized and ongoing under 11 regional offices across Kerala benefitting 292 participants.

6.10.3 Outstation training programmes

These programmes are sponsored by RTI/other bodies and conducted at selected locations, as per demand from RPSs, SHGs, Government institutions, manufacturing/ trading companies, etc. Imparted need based trainings on specified topics to the growers/ workers. The programmes helped the growers to increase production and productivity, cost reduction and additional income through quality improvement / ancillary income generation.

Sponsored offline and free online programmes

conducted on specific topics at selected locations, as per the demand from RPSs/ SHGs and organized 27 programmes to benefit growers in NT/NE/Traditional regions covering 15 NR growing states in the country.

6.10.4 Visit cum Training Programmes (Sastradarsan)

Rubber growers, members of co-operative societies, RPSs, SHGs, Kudumbasree labour groups and other related groups in rubber production and processing sectors, get the opportunity to visit RTI and RRIL and interact with scientists and technologists. These programmes are conducted on all Thursdays. During the year, 182 growers in 10 batches availed this opportunity to familiarize with latest developments in rubber plantation Industry.

6.10.5 Special training to SC /ST members under SCSP / TSP Scheme

RTI provided special training on Skill development and Capacity building to weaker sections of the society for employment generation, ancillary income generation and entrepreneur development. During 2020-21, RTI organized 16 batches of 3 days training for 394 SC/ST persons on job roles latex harvesting technician, latex processing technician and general worker in rubber plantations and mushroom cultivation.

6.10.6 External funded Project: PMKVY Skill Project, Govt. of India– Recognition of Prior Learning training for rubber plantation sector – Collaborative Project with RPD

6.10.6.1 RPL Project for re-skilling and up-skilling

The Project for skill development under the PMKVY Scheme of Govt. of India undertaken by the Board is found to be highly beneficial to the rubber growers/workers and to the plantation sector as a whole. Hence it is decided to continue the project considering the skill gap and skill shortage still exists in the plantation work fronts. Accordingly registered 172 nos of fresh batches for 5596 persons for re-skilling/up-skilling in the job roles of Latex Harvest Technician, Latex

Processing Technician- Rubber Sheeting and Plantation Worker in Skill India Portal during the year. Moreover, completed the registration process for the RPL Project with Rubber Board as PIA under the PMKVY 3.0 Scheme for the upcoming year targeting 11,000 beneficiaries in 14 states for plantation job roles.

However, the programmes could not be conducted due to suspension of all programmes by NSDC in the context of the wide spread of Covid-19 pandemic and the lockdown imposed by the Central and State Govt. RTI has completed all documentation works of the RPL Project undertaken in 2019-20. The achievements of the RED Division are listed below in Table 45.

Table 45. Trainings imparted by RED Training Division during 2020 – 21

Course Code	Course Title	Participants	Duration (days)	No. of batches	No. of participants	No. of man-days
a. Training for RPS sector						
RE 01	Capacity building for Director Board members	BOD members of RPSs	1	2	400	600
RE 04	Refresher training for RTB Members	Members of Rubber Tappers Bank(RTB)	2	1	46	92
RE 07	Latex & field coagulum collection and preservation, sheet processing	Growers/Interested persons / Members of RTB	1	1	118	118
		Sub total		4	564	810
b. Apiculture Training-Certificate programme						
DT 05	Certificate course (1 year) in Beekeeping - collaborative programme with RPS (16 batches registered during 2019-20 were ongoing during the reporting year with 439 candidates and also commenced 6 batches with 202 candidates in 2020-21)	Growers/interested persons from rubber sector	Round the year - fortnightly	6	292	3426
c. Out station training programmes						
DT01	Training on monsoon precautions in rubber plantations, tapping correction, rainguarding, LFT/CUT, scientific application of fertilizers, preservation of field latex/coagulum, sheet rubber processing, intercropping, disease management & pest control, Corynespora disease management, apiculture and productivity enhancement	Growers/interested persons mainly from rubber sector in NT/NE region	1	26	1,656	1,656
d. Special training programmes under SCSP & TSP						
	Special training for Latex Harvest Technician and Latex Processing Technician/ General Plantation Worker	NE Region - SC/ST beneficiaries	3	18	394	1,182
Grand Total				54	2,906	7,074

6.11 Human Resources Development (HRD) Division

The programmes are designed and delivered to provide conceptual understanding as well as operational skills to officers, extension functionaries and other professionals of the Board through demand-driven trainings, refresher training programmes and workshops to officers of the Board are also used to be deputed for HRD training organized by external agencies towards improving their

technical and managerial competencies and to prepare them to cope with the new challenges and for effective implementation of the functions.

During the reporting year, focus was given for Capacity building in office automation and information, Communication and Technology (ICT) for effective web services and Officers-in-Charge of Regional Offices on Finance matters and Administration. Training on recent developments in rubber diseases and control

measures to extension officers in Kerala, Karnataka & Tamilnadu, training on Right to Information Act to CPIOs/APIOs/Staff, training on GeM to officers/staff and training on Internal Auditing as part of the ISO 9001:2015 certification of Rubber Board to officials/staff of RTI were the major programmes conducted during the year for employees of Rubber Board.

Achievements of the HRD Division during the year are provided in Table 46.

Table 46. Trainings imparted under HRD Training Division during 2020 – 21

Course Code	Course Title	Duration (days)	No of batches	No. of participants	No. of man-days
TE 12	Training on office/finance management to Extension Officers of RBROs, Kerala.	2	4	149	298
TE 12	Familiarisation of online platform used for live streaming programmes to EOs in Traditional area	1	4	244	244
TE 18	Training on Recent Developments in Rubber diseases and control measures to Extension Officers of Rubber Board, Kerala, Karnataka & TN.	1	2	133	133
TE 19	Training on Faculty Development to Technical staff of RTI (in-house)	5	1	2	10
TE 24	Training on Right to Information Act to CPIOs/APIOs/Staff of Rubber Board.	1	4	142	142
TE 25	Training on testing of DRC to RB Technical Personnel	2	1	7	14
TE- EA	Training on “Collaborative Robots & Automated Guided Vehicles (Online) : Ubiquitous Disruptive Technologies for New-Age Smart Factories	1	1	1	1
	Online training on File Tracking System to Rubber Board Officers	0.5	1	24	12
	Training on GeM to officers/staff of RB	1	1	27	27
	Training on Internal Auditing as part of the ISO 9001:2015 certification of Rubber Board to officials/staff of RTI	1-2	2	36	58
Sub total			21	765	939

Webinar				
Webinar on Urged reforms in Extension and Advisory Services (EAS) for sustainable livelihood facilitation in COVID-19 backup.	0.5	1	72	36
Webinar on “Swachhta Pakhwada” to Officers/staff/ farm workers, Rubber Board.	0.5	1	125	63
Post COVID scenario-Challenges and Opportunities-Stakeholder perspective	0.5	1	90	45
Post- COVID scenario: Challenges and Opportunities - Employees perspective	0.5	1	90	45
Coping with COVID-19 -Global Rubber Scenario	0.5	1	90	45
Indian Rubber Industry in the post COVID-19 Scenario-R & D strategies for self-resilience	0.5	1	90	45
Coping with COVID-19 –Strategies for effective management of rubber plantations	0.5	1	90	45
Sub total		7	647	324
Grand Total		28	1412	1263

Impact and outcome

- Contributed effectively in utilizing the technologies and skill imparted for bringing up national level production of NR to 710,000 MT and productivity to 1459kg/ha.
- Technology initiative to switch over the offline programmes to online mode was timely in the context of Covid -19 pandemic imposed distress among the farming community and the programmes were highly beneficial to keep the sector vibrant.
- Promotion of new planting/replanting and additional income generation activities among the growers for the sustainable development of the rubber plantation sector.
- Exposure to latest R&D activities, region-wise planting recommendations, online fertilizer recommendations, low frequency tapping/weekly tapping etc. enabled growers to opt for new adaptable region specific clones with high productivity and improved economic life span.
- Focused uplifting of socio-economic status of the SC/ST and resource poor growers through employment generation, ancillary income generation and entrepreneurship development. Promotion of self-tapping, introduction of systematic method of low frequency tapping in their holdings and correction of tapping defects etc. could improve production at lesser cost.
- Capacity building of growers from NE/NT region who are introduced to the first cycle of rubber plantation to help them adopt scientific practices and maximize production from the initial stage itself.
- Exposure in updating of scientific knowledge related to the sector was useful for reducing the cost of production and improving quality of the produce.
- Improvement in quality of marketable forms of natural rubber and HR development for testing and quality control.
- Entrepreneurship development in rubber processing, product manufacture and marketing.
- Diversification/expansion through technology updation/innovation, trouble shooting, cost reduction, energy management etc.
- Improvement in technical and managerial competency of employees of the Board
- Officers could contribute to address the spread of Corynespora leaf disease, to chalk out action plan and developing management strategies for the disease control.
- The summary of physical achievement of RTI during 2020 – 21 is given in table 47.

Table 47. Physical Achievement of RTI during 2020 – 21

Type of training	Target	Achievement (Nos)	
		Beneficiaries	Man days
Calendared programmes (including SCSP/TSP programme)	4,000 beneficiaries	6,475	12,569
PMKVY– RPL: RTI – RPD collaborative Project on Rubber Plantation and Rubber Industry	10,000 beneficiaries	Nil	-
Total achievement during the year 2020-21	4,000	6,475	12,569

* 172 batches were created in the SIP, targeting 5596 nos. for 2020-21 and also application was submitted to NSDC with a target of 11,000 nos.in ten states for 2021-22. However, NSDC had cancelled all programmes due to the spread of Covid 19 pandemic. 6.10

Financial performance

The allotted budget for Rubber Training Institute to carry out its activities during the year 2020-21 was ₹ 60.00 lakh excluding operating expenses and externally funded projects, under Human Resource Development Scheme. The sanctioned budget amount was further apportioned into sub components viz. training programmes, training facilities development, SCSP / TSP Plan, etc. for efficient utilization of the fund. The financial performance of the RTI during the reporting year is furnished in Table 48.

A sum of ₹ 231.27 lakh has been generated by Rubber Training Institute (RTI) through various training activities including trainings under externally funded projects. The impact of Covid-19 pandemic in India seriously affected the allotment of new externally funded projects to Rubber Training Institute by other agencies. During this difficult year under report, RTI could able to mobilize the pending payment of ₹ 213.86 lakh under PMKVY project and the balance amount of ₹ 53.00 lakh is expected to be received during the year 2021-22.

Table 48. Financial performance of the RTI during the year 2020 – 21

Sl. No.	Name of schemes	Budget sanction (₹ in lakh)	Actual Expenditure (₹ in lakh)	IEBR (₹ in lakh)
Training under HRD scheme :				
1	a) Calendared Training programmes b) Training under SCSP/TSP Scheme	60.00	8.75	16.25
2	Training facilities development		3.90	
Sub total		60.00	17.56	16.25
Training under externally funded projects :				
1	ASAP	NIL	Nil	1.16
3	PMKVY RPL- Collaborative project of RTI and RPD & Skill Gap Study		116.19	213.86
Sub total			116.19	215.02
GRAND TOTAL		60.00	133.75	231.27

PART – VII

FINANCE & ACCOUNTS

The functions of the Finance & Accounts (F & A) Department are designing and operating the accounting system, preparation of budget, financial statements and reports, exercising budgetary control, effective resource planning and funds management, establishing and maintaining systems and procedures, arranging for statutory audit, advising on financial propriety and regularity of transactions, overseeing cost control, evaluation of projects/ schemes and handling tax matters.

F & A Department undertook the following activities during the year:

1. Preparation of Annual Budget, review and revision under zero based budgeting and exercising budgetary control.
2. Maintenance of the accounts of the Board, preparation of Annual Accounts and Balance Sheet of the Rubber Development Fund, Pension Fund and General Provident Fund.
3. Presented the annual accounts for the year 2019 - 20 for audit to Principal Director of Commercial Audit, Chennai and the audited accounts of the Board were placed before both the Houses of Parliament through Ministry.
4. Placing demands for grant from Government 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 of the Board.
6. Ascertaining the cost of production of Natural Rubber (NR).
7. Preparation of financial statements for project reports and schemes.
8. Suggesting measures for augmenting the

Internal and Extra Budgetary Resources (IEBR) of the Board and monitored the progress in collection of IEBR.

9. Dealing with various tax authorities viz, Central Income Tax, Agricultural Income Tax and Service Tax/VAT/GST matters relating to the activities of the Board and dealing with various cases in this regard.
10. Co-ordinating the activities of the companies jointly promoted by the Rubber Board and Rubber Producers' Societies (RPSs).
11. Drawal and disbursement of pay and other entitlements of the employees of the Board based on the orders issued by Government of India from time to time and management of statutory recoveries.
12. Drawal and disbursement of wages of the workers and management of statutory recoveries.
13. Regulating all receipts and payments of the Board through PFMS Platform / DBT mode and accounting the same and furnishing various statements to Ministry on DBT
14. Management of Pension Fund, processing and calculation of retirement benefit, etc.
15. Management of General Provident Fund and regulating disbursements by way of part final withdrawal, advance and final withdrawal from it, issue of Annual statements to subscribers.

Annual Accounts 2019-20

Annual Accounts for the year 2019-20 were presented to the Principal Director of Commercial Audit and Ex-officio Member, Audit Board, Chennai within the stipulated time. The Annual Accounts for the year 2019 - 20 along with the Audit Report from the Principal Director of Commercial Audit, Chennai were placed in

both houses of Parliament before the due date.

Revised Estimates 2020-21 and Budget Estimates 2021-22

The Revised Budget for 2020-21 and Budget Estimates for 2021-22 were prepared within the timeframe and submitted to the Ministry.

Budget sanctioned (RE) for 2020-21 was ₹ 187.69 crore against which the actual expenditure for the year was ₹ 201.60 crore (p). Internal and Extra Budgetary Resources (IEBR) was ₹ 17.60 crore (p). Budget sanctioned for the year 2021-22 is ₹ 190 crore.

Management of Funds

General Fund

A fund of Rs. 187.69 crore was received from Government of India as budgetary support during 2020-21. The fund raised from internal

resources was ₹ 17.60 crore (p).

General Provident Fund

The balance under General Provident Fund as on 31 March 2021 was ₹ 102.95 crore with 874 subscribers as on 31.03.2021.

Pension Fund

Number of pensioners as on 31.03.2021 was 1574. The balance in the Pension Fund as on 31.03.2021 was ₹ 28.97 crore. The accumulations in the funds are invested in term deposit to obtain optimum returns.

Cost Accounts

The Finance & Accounts Department 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.

PART – VIII

LICENSING AND EXCISE DUTY

Transactions in natural rubber are regulated by licences issued by the Board under the relevant provisions of the Rubber Act 1947 and the Rubber Rules 1955. The Licensing and Excise Duty (L&ED) Department is entrusted with the work related to issue of fresh and renewal of licence to deal in rubber (Dealers, Processors and Manufacturers) and responsible for enforcement of various provisions such as Sections 14, 15, 16, 19, 20, 21, 26 and 26A of the Rubber Act, 1947 and Rule 39, 39A, 40, 40A, 42, 43, 43A, 44, 45 & 48 of Rubber Rules, 1955 and provides all necessary guidance and support to the stakeholders. Applications for fresh/renewal of licences shall be filed and payment of licence fee remitted online through the website www.rbegp.in

The Department has three Divisions viz., Licensing, Excise Duty (ED) and Revenue Intelligence (RI) functioning at Head office, Kottayam and seven sub offices located outside Kerala.

1. Licensing Division

The Licensing Division deals with issue and renewal of licences through on-line to Rubber Dealers and Processors and other related work such as agency registration, branch registration, shifting of business premises, reconstitution of firm, trade name, etc.

Issue of Licence to Dealers

Ordinarily, licence to dealers is issued initially for five years and thereafter, renewed for every five years. During the year, 749 new licences and 1,094 renewal licences were issued for dealers. Total number of licensed dealers was 8,006 as on 31 March 2021 against 8,094 licensed dealers at the end of previous year. On specific requests of the licensees, 76 dealer's licences were cancelled. Statewise distribution of licensed dealers is given in Table 49.

Registration of branches

During the year, 80 branches were registered/renewed while 4 of them were cancelled as requested by the licensees concerned. Total number of registered branches was 799 as on 31 March 2021.

Latex collection

The Board granted permission to 66 dealers for collection of field latex for ammoniation / making superior grade sheets during the year.

Table 49. State wise distribution of licensed dealers as on 31.03.2021

Sl.No.	Name of State	No. of dealers
1	Andaman & Nicobar Islands	2
2	Andhra Pradesh	4
3	Arunachal Pradesh	2
4	Assam	92
5	Chhattisgarh	1
6	Delhi	109
7	Goa	1
8	Gujarat	32
9	Harayana	45
10	Jharkhand	2
11	Karnataka	132
12	Kerala	5,684
13	Madhya Pradesh	5
14	Maharashtra	73
15	Manipur	2
16	Meghalaya	3
17	Mizoram	1
18	Nagaland	9
19	Odisha	5
20	Puducherry	1
21	Punjab	125
22	Rajasthan	23
23	Tamilnadu	276
24	Telangana	9
25	Tripura	1240
26	Uttarakhand	1
27	Uttar Pradesh	54
28	West Bengal	73
Total		8,006

Approval of change of licensed premises/ constitution/additional godowns

On specific request, the Board approved 39 dealers for shifting of premises, 7 dealers for change of trade name and 7 cases for change of constitution of dealership. Besides, the Board also registered 16 additional godowns during 2020 - 21.

Issue of Licence to Processors

During the year 2020-21, 3 fresh licences were issued to processors and 37 licences were renewed on expiry of validity. Total number of licensed processors was 102 as on 31 March 2021. Out of 102 licensed processors, 79 processors are located in Kerala, 9 in Tamil Nadu, 10 in Tripura and 4 in Karnataka. Most of the processors are producing centrifuged latex and block rubber.

2. Excise Duty Division

- The Division discharges the functions of issue and renewal of licences of manufacturers. It also deals with the following licensing related works :
- Registration of authorizations issued by manufacturers to their purchase agents
- Endorsing change of constitution for firms and other amendments in records
- Processing the cases of unpaid cess referred to revenue recovery proceedings and filing claims and follow-up actions thereof
- Initiate action against violators of the provisions of the Rubber Act / Rubber Rules and conditions of licence and institute compounding actions
- Issuing authorization for acquiring rubber for trial/testing purpose, etc.

Issue of Licence to manufacturers

During the year 2020-21, the Division issued 184 fresh licences and renewed 68 licences and cancelled 58 Manufacturers' licences. Total number of licensed manufacturers were increased to 4,289 as on 31 March 2021 against 4091 in 2019-20. Statewise distribution of licences issued during 2020-21 is given in Table 50.

Registration of authorization

Special letters of authorization were issued to 10 institutions to purchase rubber for experiment

/ research purposes.

Issue of Emergency Licence

The Board issued seven Emergency Licences during the year to sell rubber acquired by a licensed manufacturer to another licensed manufacturer in an emergency.

Amendments in Licence / Records

The Division has made amendments such as change of constitution, quantity enhancement, change of name and address of the firm/company, addition of storage/factory premises etc. in 42 manufacturers licences and relevant records during 2020 - 21.

Table 50. State-wise distribution of licences issued in 2020-21

Sl.No	Name of State/ Union Territory	Number of units
1	Andhra Pradesh	44
2	Assam	6
3	Bihar	6
4	Chandigarh	1
5	Chhattisgarh	16
6	Delhi	95
7	Goa, Daman, Diu	21
8	Gujarat	427
9	Haryana	338
10	Himachal Pradesh	21
11	Jammu & Kashmir	2
12	Jharkhand	21
13	Karnataka	159
14	Kerala	687
15	Madhya Pradesh	61
16	Maharashtra	480
17	Odisha	12
18	Puducherry	8
19	Punjab	394
20	Rajasthan	152
21	Tamilnadu	456
22	Telangana	90
23	Tripura	5
24	Uttar Pradesh	425
25	Uttarakhand	27
26	West Bengal	335
Total		4,289

Initiation / follow-up actions of revenue recovery cases

All the cases of unpaid cess had already been reported for revenue recovery (RR). There are 1,094 cases of revenue recovery at the end of reporting year. During the year an amount of ₹ 2.86 lakh has been received from RR authorities towards realization of reported cases. Timely follow up action is being taken on all pending cases.

3. Revenue Intelligence Division

Revenue Intelligence (RI) Division is functioning as an effective wing to prevent unlawful transactions / clandestine transportation of rubber. RI Division is monitoring rubber transactions through returns filed online by the licensees. Inspections are being conducted to verify the correctness of physical stock of rubber and books of accounts verified to check the correctness of particulars furnished in returns. Initiate corrective measures against the erring licensees by enforcing the relevant provisions of the Rubber Act, 1947. The Central Revenue Intelligence Squad at Kottayam, five RI Squads attached to Board's Regional Offices in traditional area and seven Sub Offices are engaged in enforcement activities.

Activities of Inspection Squad

The Central Squad attached to Head Office, Kottayam and Inspection Squads functioning from Taliparamaba, Palakkad, Muvattupuzha, Punalur and Marthandom played a major role in arresting the illicit trade in rubber. The Squads have conducted inspections to ascertain suitability of the applicants and their business premises for the purpose of issuing licence to deal in rubber, registration of branches of dealers and approval of new / additional premises, issue of special authorization for collection of field latex, etc.

During the year 2020-21, Inspection Squad spent 196 man-days on tour and inspected 585 Dealers/Processors in spite of tour restrictions due to COVID pandemic. Further, RI Division detected irregularities/flouting rules involving total quantity of 5,986 MT of rubber and Inspection Squad conducted 3 vehicle checking on road, which facilitated to restrict movement

of illicit consignments to a great extent. Full-fledged inspections could not be carried out due to restrictions imposed for containing the spread of COVID-19.

4. Sub Offices

To carry out the envisaged functions of the L & ED Department and to liaison with various Government departments associations and organizations in rubber sector, seven sub offices are functioning across the country at New Delhi, Mumbai, Kolkata, Chennai, Mangalore, Guwahati and Agartala. These offices perform the function of monitoring movement of rubber, initiate actions of unlawful possession and transport of rubber, follow up revenue recovery cases, ensure timely filing of returns by licensees, extend required support for issue/renewal of licence etc. Routine inspections are restricted to specifically referred cases detected on verification of returns or information received from reliable sources. Inspection/sample collection of imported/exported NR for quality check is being done by Mumbai and Chennai Sub Offices. All Sub Offices undertook liaison work with various Government Departments / Organizations in rubber sector, as and when required.

5. Compounding of Offence

Contravening any provision of the Rubber Act or any rule made under the Act is punishable with imprisonment or with fine or with both. However, Section 26A of the Act provides for compounding of offences committed in respect of any quantity of rubber. During the year, with the collective efforts by the sub offices, check posts, squad units and the three Divisions, the Department detected various irregularities/ violation of provisions of Rubber Act/Rules committed by manufacturers involving 8,767 MT of rubber and collected Rs.20.01 lakh from different offenders towards compounding charge.

6. RUBHELP (Help Desk for various online services of the Board)

As part of ease of doing business, Rubber Board launched a Help Desk titled as "RUBHELP" to assist the stakeholders in various online services of the Board on 1st October 2019 through online services. RUBHELP

project is initiated by L&ED Department and has been functioning at all sub-offices, Revenue Intelligence squad office and at Head office.

The following services are provided by RUBHELP through online are as follows:

- Filing of application / uploading of documents for fresh / renewal of licences by Manufacturers / Dealers / Processors
- Filing of monthly and other statutory returns by various stakeholders

- Filing of application for Registration-cum-Membership Certificate (RCMC)
- Filing of monthly returns by Exporters
- Filing of application / uploading of documents for NOC in respect of imported consignments of NR

The Board provided 5,788 services through RUBHELP for 893 stakeholders and collected ₹ 6.10 lakh during the year 2020 - 21.

SUMMARY

Overall performance of the L & ED Department during the year 2020-21 is as follows:

(a) Number of Manufacturer's licences as on 31 March 2021	4,289
(b) Number of Dealer's licences as on 31 March 2021	8,006
(c) Number of Processor's licences as on 31 March 2021	102
(d) Number of inspections/other visits conducted	595
(e) Total quantity of rubber involved in irregular/ unlawful transactions detected (in MT)	8,767
(f) Number of online services provided to stakeholders through "RUB-HELP" (Help Desk Service)	5,788
(g) Amount of cess /interest dues received which was reported for revenue recovery	₹ 2.86 lakh

Internal and Extra Budgetary Resources (IEBR) collected

(h) Amount of compounding charges received during the year	₹ 20.01lakh
(i) Amount of licence fees collected	₹ 112.23 lakh
(j) Other receipts from Sub Offices	₹ 45.85 lakh
(k) Help Desk charges collected	₹ 6.10 lakh

PART – IX

STATISTICS AND PLANNING

Statistics and Planning (S&P) Department is functioning under the direct control of Executive Director of the Rubber Board. One of the prerequisites for effective formulation of development projects / schemes and implementation of policy in NR sector is the availability of updated, precise and reliable statistics on NR and related sector.

A salient feature of the rubber industry in the country is the dominance of the smallholding sector. Currently 91% of the rubber planted area and 92% of the production is contributed by the smallholding sector, which comprises around 1.3 million units with an average size of 0.57 hectare. Information from smallholdings has to be collected on monthly and annual basis for assessing different parameters connected with the industry. Up-to-date statistics related to global production, consumption, import and export of all types of rubber have also to be gathered to know the quality and quantity produced/used

and thereby to capture the trends in international market. Rubber is a perennial crop with long gestation period of around 7 years. Therefore, for formulating any development project in NR sector, one should have reliable projections on area, productivity, production and consumption of NR. These projections should be reviewed periodically according to the changes in scenario.

Rubber Board collects statistics subject to the provisions as envisaged in the Rubber Act 1947 and the Rubber Rules 1955. The Department focuses on data quality, consistency and timeliness of disseminated statistics that conforms to internationally accepted concepts and methodology.

1. Provisions governing Statistics under Rubber Act and Rubber Rules

The provisions governing the collection of statistics on rubber and statutory returns as per the Rubber Act, 1947 and Rubber Rules, 1955 are furnished in Tables 51 & 52.

Table 51. Provisions governing the functions of Statistics on NR

Section	Functions
8(2) (e)	One of the basic functions under Rubber Act; the collection of statistics from owners of estates, dealers, manufacturers and processors.
8(3) (a)	To advise the Central Government on all matters relating to the development of the rubber industry, including the import and export of rubber.
20(a)	Every owner, every manufacturer and every holder of a special licence issued under section 14 shall submit to the Board, such returns at times, in such forms and containing such particulars, as may be prescribed.
20(b)	Maintain true and correct accounts and other records pertaining to his estate or business, as the case may be, in such form as may be prescribed.
Section 25 (xix)	The collection of any information or statistics in respect of rubber or any product of rubber.

Table 52. Statutory Returns

Stakeholders	Forms	Under Rule	Frequency
Large Growers	H & L	43(1)	Monthly
	H1		Annual
Dealers	H2 & L	43(2)	Monthly
Manufacturers	K & L	43(3)	Monthly
	K1		Annual
Processors	H3 & L1	43(4)	Monthly

Under rule 43A, where the Act or these rules require any person to submit any statement or return, that person shall submit a 'nil' statement or return for any period for which there are no particulars to be furnished in the statement or return.

2. Key functions of the Statistics & Planning Department

1. Publication of official monthly and annual statistics of the Indian rubber industry by collecting statutory returns from growers, processors, traders and end-users.
2. Surveillance on the Indian and global rubber industry and identifying long and short-term issues having potential implications for the demand and supply of natural rubber.
3. Analyse the domestic and international prices of NR and preparation of the outlook.
4. Carrying out regular monthly sample surveys for assessing tapped and tappable area, type-wise production and stock of NR by considering regional variations in productivity, level of adoption of recommended agro-management / harvesting practices, tapping system, etc.
5. Plan / organize periodical surveys and preparation of survey-based analytical reports.
6. Drafting analytical reports on domestic rubber industry and report through statistical publications of the Rubber Board.
7. Projecting long-term demand and supply of natural rubber in India.
8. Provide all statistical services to international and inter-governmental rubber organizations
9. Rendering statistical services to other Departments/Divisions in Rubber Board, especially to Research and Rubber Production departments.
10. Conducting meetings of the Internal Statistics Monitoring Committee (ISMC) and Statistics Consultative Panel (SCP) to examine the key estimates, review the

quality of estimates and its methodology and make revisions thereof including NR projections.

11. Facilitate consultations with stakeholders.

The Department published the annual Publication "Indian Rubber Statistics", Volume 41, 2020. Projections were made for supply and demand of NR in India for the period up to 2030. Necessary interventions were made for smooth functioning of the online system "RUBIS". One of the officers of the Department served as a member of price fixing committee for M/s. Plantations Corporation of Kerala (PCK), M/s Rehabilitation Plantations Ltd (RPL) and M/s State Farming Corporation of Kerala (SFCK). The Department prepared statements of updated statistics and projections pertaining to Indian rubber sector on a monthly basis for Association of Natural Rubber Producing Countries (ANRPC) and International Rubber Study Group (IRSG).

During 2020–21, the Department collected statistical information from growers, processors, traders and end-use products manufacturers through monthly and annual statutory returns. Regular monthly sample surveys using stratified random sampling technique were carried out among smallholdings for assessing tapped and tappable area, type-wise production and stock of NR by considering regional variations in productivity, level of adoption of recommended agro-management practices, tapping system and harvesting practices. Statistics related to the rubber industry are gathered exclusively by the Department and no other agency is engaged in this regard.

An Internal Statistics Monitoring Committee (ISMC) headed by Executive Director reviewed the statistics on key variables and projections on a monthly basis. Monthly trends in the country's production, consumption, import, export and stock of natural rubber, synthetic rubber and reclaimed rubber and prices are published in the monthly online publication "Rubber Statistical News" through website of the Board.

During 2020–21 three meetings of Statistics Consultative Panel (SCP) chaired by the Executive Director were held to discuss and review key NR statistics compiled by the

department, through video conferencing.

The Department rendered information services to the Central Government, State Governments, different governmental and non-governmental bodies, industry associations, research institutions, individuals and the media. These include statistical information provided for framing answers to Parliament Questions, information provided under the Right-to-Information Act and information services rendered to international and inter-governmental bodies.

Officers of the Department participated in the meetings in connection with Mobile App development for 'Census on Rubber Area 2020' and discussed the mobile App web console, workflow etc. with officials from IITMK, officers in the RP Department and EDP personnel. Officers of S&P Department in association with officers from RP department, imparted training to the enumerators under Pala Regional Office and in one station under Changanassery Regional Office about the data collection using mobile application.

Joint Director (S&P) functioned as the Chairperson of the committee on sexual harassment against women at workplace in the Board.

Services of statistical unit in Research Department:

Statistical unit of Research Department rendered the following services to the Scientists and Regional Research Stations (RRS) located across the country:

- Designing of experiments pertaining to field and laboratory.
- Statistical analysis and interpretation of data.
- Preparing layout for statistical tables.
- Review of scientific papers.
- Impart training to scientists on design of field experiments and use of statistical tools.
- Development of computerized programmes for statistical analysis.

PART X

DIVISIONS UNDER THE DIRECT CONTROL OF THE EXECUTIVE DIRECTOR OF THE BOARD

1. PUBLICITY AND PUBLIC RELATIONS DIVISION

The P&PR Division undertook the following activities during 2020 – 2021.

1.1 Publications

The Division brought out 10 issues of 'Rubber' magazine in Malayalam, an extension magazine containing cultural operations to be undertaken by the growers in the near future, scheme details, popular articles, rubber news and activities of the Board. The average monthly circulation was 14,653. The Division received 49 advertisements for "Rubber" magazine and earned ₹ 3.2 lakh. 12 issues of 'Rubber Statistical News' and 12 issues of 'Rubber Board News Bulletin' (digital version) were published and uploaded on Board's website during the year.

Besides, the Division published printing of leaflet on Colletotrichum Circular leaf spot disease and designed the digital brochure for "Campaign 2020" and co-ordinated publications of Rubber Varthe (Kannada monthly), Rubber Malar (Tamil quarterly), Rubber Samachar (Bengali) and Rubber Songbad (Assamese quarterly). The Division published articles related to rubber sector and activities / services of the Rubber Board.

1.2 Call centre

The Board had established a Call Centre at Head Office with the objective to function as a centralized contact point for telephone calls from rubber growers and stakeholders seeking technical advice on all aspects of rubber cultivation. During the year, the Board arranged

36 special phone-in programmes in relevant topics on a fortnightly basis and also, published important queries/ answers through "Rubber" magazine for stakeholders benefit.

1.3 Right to Information Act 2005

Deputy Director functioned as the Link Public Information Officer of the Board and Assistant Director as the nodal officer of the RTI web portal of the Board and Central Public Information Officer (CPIO) of P&PR Division. During the year, 21 RTI applications were received and disposed of by the Division. Regular reports such as monthly, quarterly and yearly reports on RTI were furnished to the Ministry and published on the website of the Rubber Board.

1.4 Press Releases, Advertisements and Media Alert

The Division issued 224 press releases (Malayalam & English) on important developments in rubber sector. Press clippings (1,183 numbers) relating to rubber sector were scanned, compiled and forwarded to the Executive Director and senior officers of the Board.

1.5 Social media – Twitter, Facebook and Whatsapp

The Division continued to maintain official Twitter, Facebook accounts, YouTube channel and Whatsapp group "The Rubber Board Info" for the benefit of stakeholders and employees of the Board. Board also took account in social media platform KOO. Posted 861 messages in Facebook, KOO & 997 messages on Twitter and uploaded 12 videos in Rubber Board You Tube channel. Further, the Board organized the live streaming of talk by Executive Director and

various programmes of the Board on Facebook. Produced 6 videos conveying various aspects of rubber cultivation and uploaded in social media platforms during the year for extension purpose.

1.6 Website of the Rubber Board

Translated web pages to Malayalam and uploaded in the Malayalam version of the portal and regularly updating news in the Board's English and Malayalam websites. Arranged for the content updation of the website. Liaised with EDP Division for uploading press releases and press clippings on the Intranet portal of the Board .

1.7 All India Radio and TV / Doordarsan

The Division arranged for broadcast of important events in rubber sector and activities of the Rubber Board and gave talks / interviews on various topics of rubber sector in All India Radio, Thiruvananthapuram and Kochi and through various TV channels.

1.8 Media relations

Officers of the Division published articles related to rubber cultivation and activities of the Board in various dailies and agricultural journals. Gave inputs to media for articles related to rubber sector and Board.

1.8 India Rubber Meet Forum

Deputy Director functioned as Secretary of India Rubber Meet Forum (IRMF). The Division functioned as Secretariat of IRMF and organized the annual general body meeting and executive committee meetings of IRMF.

1.9 General

The Division attended to the publicity requirements of the various events organised by the Board. Deputy Director (P&PR) functioned as member to Advisory Committee of Farm and Home programme of AIR Thiruvananthapuram. he also functioned as the Chairman of Adoor Rubbers. Maintained horizontal communication with all the offices of the Board through digital media on institutional developments, official news, etc.

2. VIGILANCE DIVISION

Vigilance Division investigated nineteen complaints against six officers of Group A status, three officers of Group B status, four staff of Group C status of the Board and also six cases connected with stakeholders of the Board during the reporting period. Generally, the complaints were varied in nature and on completion of the investigation, appropriate action was recommended / taken against the erring Board's officials, wherever found required/necessary.

2.1 Cases/Suspension

The Board initiated one minor penalty proceedings against one official of the Board under the Rubber Board Service (CCA) Rules, 1961. The Division assisted the Disciplinary Authority in processing/initiating the aforesaid disciplinary case. During the reporting year, two major penalty orders and an order exonerating the charged employee against whom minor penalty action was initiated were also issued.

2.2 Vigilance Cases disposed of during the year 2020 – 21

- i) Major penalty proceeding initiated against Sri Ajimon KG, Attender Regional Office, Punalur for causing physical assault and mental agony to a fellow woman colleague and for making derogatory comments against his superior officer was concluded by imposing on him the penalty of "reducing the pay by one stage, ie from ₹ 31,100 to ₹ 30,200 in pay level 2 for a period of one year with cumulative effect".
- ii) The minor penalty proceeding initiated against Sri P T Binu, Attender, Regional Office, Erattupetta for offending the sensitivities of a fellow woman colleague by calling her an unpleasant name with ill motive to malign and defaming her causing irreparable injury was concluded by "letting off the charges levelled against him".
- iii) The major penalty proceeding against Sri P T Binu, Attender, Regional Office, Erattupetta for threatening a fellow woman colleague by uttering derogatory words causing harassment was concluded by

imposing on him the penalty of reducing the pay by one stage, ie from ₹ 35,000 to ₹ 34,000 in pay level 3 for a period of one year with cumulative effect.

2.3 Cases pending as on 31 March 2021

- i) Major penalty proceeding initiated against Dr. James Jacob, Director (Research), Rubber Research Institute of India for his manipulation in the Recruitment Rules for selection of the candidates of his choice and practicing nepotism/bias in the selection of scientific posts at Rubber Research Institute of India, Kottayam – 9.
- ii) Major penalty proceeding against Sri Dibyajyothi Bhoi, Junior Farm Officer, Regional Research Station, Dhenkanal for his attempt to cheat a woman with ulterior motive under the pretext of promise of marriage, demand of dowry, chatting during official duty, damaging the reputation of the Board etc.
- iii) Minor penalty proceeding initiated against Sri Saurabh Talukdar, Assistant Director (Excise) for fraudulent submission of ineligible Children's Education Allowance claim while on deputation as Deputy Director (Investigation) at Serious Fraud Investigation Office, New Delhi.

2.4 Inspections

Four surprise inspections were carried out at various offices of the Board as part of preventive and predictive vigilance and suggestions were submitted for initiating remedial measures wherever found necessary.

2.5 Property statements & acquisition/ disposal of movable and immovable properties

Annual Immovable property statements as on 31.12.2020 were called for and received from 1179 officers' of the Board in Group "A", "B" and "C" status. The statements received from the officers have been properly dealt with. The Division also processed 42 applications relating to transactions in immovable property and 59 applications pertaining to transactions in

movable property, as required under the Rubber Board Employees' Conduct Rules, 1958.

2.6 Comments/advice

During the year 2020-21, 82 files/cases were referred to the Vigilance Division from other Divisions/ Sections/Offices of the Board for comments/advice. All these files/matters were properly dealt with and returned promptly with comments/advice thereon.

2.7 Other activities

As instructed by the Central Vigilance Commission, "Vigilance Awareness Week" was observed in the Board from 27.10.2020 to 02.11.2020, in a befitting manner, following COVID-19 protocol and economy measures stipulated by the Department of Expenditure, Ministry of Finance, Government of India. Vigilance Awareness Week commenced with administration of the integrity pledge at 11 AM on 27.10.2020 in all the offices of the Board. There was wide news coverage in the dailies regarding observance of Vigilance Awareness Week in the Rubber Board. Essay competition on the subject "Satark Bharat, Samriddh Bharat" (Vigilant India, Prosperous India) was conducted with the participation of employees of the Board working at Kottayam and suburbs on 27-10-2020. Poster competition on the subject "Satark Bharat, Samriddh Bharat" (Vigilant India, Prosperous India) was conducted for the children of Rubber Board employees residing/ working in nearby areas of Headquarters of the Board and suburbs in the age group of 10 to 22 years on 28-10-2020. The winners of both the competitions were given certificates of merit and cash award by Executive Director, Rubber Board on 1st December 2020 in a function held at his chamber following the social distancing norms.

Besides, as part of outreach activities for dissemination of anti-corruption message and redressal of customer grievances, Officers of Vigilance Division visited two Rubber Producers Societies (NGO) engaged in rubber processing and various related activities during the week and had interaction with the Board of Directors of the respective RPSs.

The monthly and quarterly returns on departmental inquiries and vigilance cases

and complaints etc. dealt with in the Vigilance Division are being submitted regularly to the Ministry and Central Vigilance Commission.

The Assistant Vigilance Officer is functioning as the Central Public Information Officer (CPIO) of the Vigilance Division, under RTI Act, 2005 and also assisting the 1st Appellate Authority in disposing RTI appeals. The Vigilance Officer is exercising functional control over the Assistant Security Officers posted at Rubber Research Institute of India and Headquarters of the Rubber Board.

3. INTERNAL AUDIT DIVISION

According to Section 24(2) of the Rubber Act, 1947, Accounts of the Board shall be audited annually by Auditors appointed by the Government of India. Audit of the accounts of the Board has been entrusted with the Comptroller and Auditor General of India under Section 20 (1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act 1971.

As statutory audit cannot look into everything within a short span, it has to depend largely on the effectiveness of the Internal Audit System that exists. IA Division being the important instrument of control and the means to know the state of affairs and conditions of working of different Departments/Divisions, functions directly under the control of the Executive Director, the principal executive officer of the Board.

Internal Audit is an independent appraisal activity within an organization for the review of the operations as a service to the management. It is a managerial control which functions by measuring and evaluating the adequacy and effectiveness of other controls. Basically internal auditing is a control system and it is concerned with examination and appraisal of other control mechanisms. Internal audit has become an important management tool to look in to the standard of efficiency and for pointing out the inefficiencies in the operations and drawbacks of functional Departments/Divisions/ Offices. Internal auditing is completely detached from the day to day operational functioning of the organization, so as to evaluate the problems independently in terms of overall management

control and suggests improvements needed. With a view to achieve the above aim, the Internal Audit Division has been conducting auditing of various units, scrutiny of Bank Reconciliation Statements and pendency of file processing at different units.

The Internal audit and inspection reports issued were examined by the C&AG / Internal Audit Wing of the Ministry of Commerce & Textiles and have expressed satisfaction to the functions of the Division. The Division did all liaison work in connection with these audits and arranged timely replies to Audit Reports issued by the Auditors.

This Division is also entrusted with the Service Book verification of employees for the calculation of pension and other terminal benefits. This Division has verified 179 Service Books with personal files in connection with service verification and calculation of retirement/death/VRS benefits. Also expressed audit views for various files referred to the Division from other Departments/Divisions on service and other matters during the year.

During the year under report, Internal Audit Division scrutinized pay fixation of 688 employees and pension re-fixation of 154 pensioners.

In addition to the above functions, economy in maintenance of vehicles and consumption of fuel was ensured by obtaining and scrutinizing monthly statement in respect of all the Departments/Divisions/Offices and through follow up actions. The Division ensured to obtain the Annual physical verification of stock and stores reports. Follow up action was initiated for timely settlement of TA/LTC/Contingent advances in all units. The arrear statements of all departments were scrutinized for taking corrective measures to avoid delay in processing of files. In short Internal Audit Division assists the Executive Director to ensure that all activities of the Board follow rules and approved procedures. The Division also examines files forwarded for Audit observations/suggestions and for expert opinion on matters involving rules/procedures.

The detailed replies furnished by the Rubber Board against the outstanding audit queries / paras raised during 2017-20 are compiled and furnished in Annexure – I.

Summary of the outstanding audit para as on 31st March 2021 is furnished in Table 53.

Table 53. Summary of current status on outstanding audit paras as on 31/03/2021

Year to which audit report pertains	No. of total audit paras included in the audit report	No. of audit paras settled till date	No. of outstanding audit paras	Name of the Audit agency
2017-18	12	–	12	Further comments awaited from CAG
2012-16	14	7	7	Internal Audit Wing of Ministry of Commerce and Textiles
RRII since inception up to 31/03/2016	10	-	10	
01/04/2016 to 31/03/2019	15	-	15	
TOTAL	51	7	44	Pending paras with CAG & IAW - MoC

4. PLANNING DIVISION

The activities of the Planning Division during 2020-21 are summarised under the following seven headings.

1. Formulation, Monitoring and Evaluation of Plan Schemes

All the activities of the Board are components of the approved scheme for the respective plan periods. The year 2020-21 was the continuation period of the scheme titled “Sustainable and inclusive development of natural rubber sector” approved for the Medium Term Expenditure Framework (MTEF) period from 2017-18 to 2019-20. The Division coordinates the activities related to the formulation, implementation and monitoring of Plan Schemes. The Scheme Coordinating & Monitoring Committee (SC&MC) with Executive Director as Chairman and Nodal Officers of scheme components as Members oversees implementation and monitoring of scheme related activities. Planning Division functions as the Secretariat of the SC&MC and Officer-in-Charge of the Division officiates as its Secretary. The SC&MC met eleven times during the year 2020-21.

Collection, compilation and consolidation of the information on progress in the implementation of plan schemes are regularly undertaken for

preparing routine and other reports for internal planning and submitting to the Department of Commerce.

Outlay, Fund release and expenditure during the year 2020-21

The MTEF Scheme “Sustainable and inclusive development of natural rubber sector” was continued by Rubber Board during 2020-21 as per O.M. No. G/20/2019-IFD dated 14 January 2020 of Finance Division of Department of Commerce with the following major components.

1. Rubber Plantation Development & Extension
2. Rubber Research
3. Support for processing & marketing, infrastructure development and specialised services
4. Human Resources Development
5. Establishment

Funds released for 2020-21 was ₹ 187.69 crore and IEBR was ₹ 17.60 crore. The expenditure during 2020-21 is presented in the following Table 54.

Table: 54. MTEF Scheme component-wise expenditure during 2020 – 21 (₹ in crore)

<i>Sl.No.</i>	<i>Component</i>	<i>Expenditure</i>
1	Rubber Plantation Development & Extension	27.55
2	Rubber Research	8.96
3	Support for processing & marketing, specialised services and infrastructure development.	2.86
4	Human Resources Development	4.56
<i>Sub Total</i>		<i>43.93</i>
5	Salary & Pension	146.69
6	Establishment Cost	10.99
Total		201.60

Documents prepared on scheme activities

The documents pertaining to plan schemes prepared included the following.

- Periodic reports on physical and financial performance of scheme components.
- Orientation-Output-Outcome Monitoring Framework - targets and quarter wise achievements.

➤ Field survey on recommendations/ observations of Evaluation Committee on MTEF Scheme

The Medium Term Expenditure Framework (MTEF) Scheme of the Rubber Board was evaluated by a National Level Committee of Experts chaired by Shri K. M. Chandrasekhar IAS (Retd), former Cabinet Secretary and the Report was forwarded to the Department of Commerce in December 2019.

As suggested by Department of Commerce, Rubber Board conducted a field survey during September/October 2020 among rubber growers with regard to their response on the major recommendations/observations of the Evaluation Committee on the schemes and activities. The report of the field survey that was added to the Third Party Evaluation Report as an Addendum was submitted to the Department of Commerce.

EFC Memorandum on the schemes for the period 2021–22 to 2025–26

The Division coordinated the formulation of EFC Memorandum of the scheme “Sustainable and inclusive development of natural rubber sector” for the period 2021-22 to 2025-26. The draft EFC Memorandum with a proposed outlay of ₹ 1550 crore was submitted to the Department of Commerce and provided clarifications on the observations made on draft EFC Memorandum with appraisal for continuation of scheme by Department of Commerce, Department of Social Justice & Empowerment, Ministry of Development of North Eastern Region, Department of Expenditure, Ministry of Finance and NITI Aayog.

Collaborative Project for Natural Rubber Plantation Development with Focus on North East India

In pursuance to the discussions on involvement of tyre companies in rubber plantation development activities as proposed by Hon'ble CIM in VC held on 16 June 2020, the Board had correspondence and discussions with Automotive Tyre Manufacturers Association (ATMA) on the manner in which the matter is to be pursued. A collaborative project in PPP mode for rubber plantation development involving

tyre majors represented by ATMA, State Governments, Rubber Board and financing institutions is a path-breaking initiative under the guidance of Hon'ble CIM for accelerating rubber plantation development, quality improvement and allied activities with focus on North East India.

The plan is to develop 200,000 hectares of rubber plantations in North East with a contribution of ₹ 1,000 crore from tyre companies during a term of five years. The rubber plantation development is proposed in two modes viz., (i) credit based mode wherein loan will be extended under a NABARD Scheme and interest subvention during immature phase will be met by tyre industry funds limited to ₹ 50,000 per ha; and (ii) direct financial support mode where financial assistance will be limited to ₹ 50,000 per ha and the remaining cost will be met by beneficiaries and under convergence with other central and state schemes.

The Project also envisages undertaking quality improvement and skill development activities with an outlay of ₹ 100 crore covering all rubber growing regions. Convergence with central and state schemes will be an integral component of the Project. Successful implementation of the Project would pave the way to increase domestic production of NR; save foreign exchange; serve to develop North East region; improve the living standards of beneficiary tribal and resource poor communities; generate employment opportunities and contribute significantly to sustenance of a clean ecosystem.

- Consultancy for formulating Credit Linked Rubber Plantation Development Plan (CLRPDP) Scheme for NE region and Banking Plan was awarded to M/s Nabcons as approved by the Department of Commerce.
- Hon'ble CIM held meeting with Chief Ministers, Ministers and senior officials of seven NE States on 05.01.2021.
- Executive Director along with a delegation from ATMA/ tyre companies visited Assam and Guwahati from 15 to 18 February 2021.
- Memorandum of Understanding (MoU)

was signed by Executive Director of the Board and Director General of ATMA on 01.03.2021.

2. Parliamentary Matters and PMO/VIP References

The Division is responsible for preparing materials on parliamentary matters such as supplying materials on parliament questions, matters raised during Zero Hour and under Rule 377 and parliament assurances. Details of documents prepared on parliamentary matters are as follows.

- Status notes on rubber sector with topical issues for all Parliament Sessions.
- Materials for framing replies to 47 Parliament Questions and Notepads, executive summary and bullets points for starred questions. The parliament questions covered the following aspects:
- Status of rubber sector in terms of area under rubber, production, import and export
- Covid impact on export, Covid package, Schemes implemented during Covid-19
- Rubber Act
- Plantation Sector, Plantation crops, Rubber plantations, Plantation workers, Health and safety of labourers.
- Natural rubber farmers , Subsidy to rubber growers
- Rubber Park
- Task Force on Rubber Sector
- Developmental activities in Garo Hills, Rubber plantations in Nagaland
- Assam Rubber Industry
- Tribal welfare schemes and funds allocated
- Other general matters
- Materials for framing point-wise replies to the questionnaire of Department Related Parliament Standing Committee on Commerce - Examination of Demands for Grants (2021-22)

- Materials for framing reply pertaining to Rubber Board in the 152nd Standing Committee Report on Demand for Grants (2020-21)
- Materials for framing replies to questions pertaining to Rubber Board in second set of Questionnaire on detailed Demands for Grants (2021-22) of Department of Commerce.
- Details to the observation of Department Related Parliamentary Standing Committee on Personal, Public Grievances, Law and Justice.
- Action taken replies on presentation of the 156th Report of Department Related Parliamentary Standing Committee on Commerce- Examination of Demands for Grants (2020-21)
- Materials for framing replies to Notice of Motions for Reduction in Demands for Grants pertaining to 2021-22 on
 - Funds for establishing Rubber Park at Pathanapuram, Kerala
 - Fair/ remunerative prices and Minimum support price at par with cost of production
- Inputs were supplied to state governments for framing replies for Legislative Assembly interpellations.
- Provided inputs on PMO References and VIP References on issues related to rubber and allied sectors.

3. Assisting in policy formulation

Assisted in framing and providing views of the Board on policy matters related to rubber sector to Department of Commerce and other agencies as indicated below:

- Views of the Board on representations received by Central Government from rubber producing, trading, consuming and other sectors.
- Implications of Regional Trade Agreements (RTAs), other FTAs and other forms of international cooperation on domestic rubber sector.
- Tariff policy on rubber and rubber products

- Status notes on rubber sector and development/initiatives in rubber sector in different states.
- Pre-budget proposals for 2021–22 of Rubber Board on Customs Duty on “natural rubber”
- Updated induction notes on Rubber Board and Indian NR sector
- Replies for grievances related to the rubber sector
- Matters related to the Rubber Act and other regulations
- Policy related documents for meetings of the Rubber Board and other meetings

The Division monitors the following developments to source inputs for preparing reports and policy notes on rubber industry.

- Developments in domestic NR and related sectors
- Developments in other rubber producing and consuming countries
- Macroeconomic trends in world economy and other major economies.
- World Trade Organisation and FTAs/RTAs

4. Key Result Areas (KRAs)

The Board had a set of KRAs for implementation in 2020 - 21. Nodal Officers were assigned for the implementation of KRAs. The Division coordinated monitoring of performance of KRAs, conducted review meetings and handled correspondence including quarterly progress reports. The Board accomplished most of the KRAs.

5. Coordination of collaborative projects, committees, meetings and other activities

The Division coordinated the conduct of various meetings including preparation of documents, presentations and handling of correspondence.

i CIM Dashboard Tasks

The Board was assigned several activities as CIM Dashboard Tasks by the Department

of Commerce. The items were assigned to different Departments/ Divisions of the Board for implementation. The Division coordinated the monitoring of the progress and review of the tasks and related correspondence.

Task ID 4047: Study the quality and productivity of the 5 Commodity Boards

- The Board had assigned the study on quality and productivity to the Centre for Development Studies (CDS), Thiruvananthapuram.
- The study was completed and the final report of the study was submitted to Department of Commerce in November 2020.

Task ID 4060: Study the requirement for fund infusion in all the commodity boards for next 4-5 years, such that they become self sufficient, help in import substitution and boost exports.

The Study Report was submitted to Department of Commerce in November 2020.

- ii. National Research Programme on Plantation Development (NRPPD)

The Division coordinated NRPPD related activities. 9th meeting of Steering Committee of NRPPD was held on 24 July 2020.

6. Coordination of participation of India in intergovernmental rubber organisations

India is a member of International Rubber Study Group (IRSG) based in Singapore and Association of Natural Rubber Producing Countries (ANRPC) based in Kuala Lumpur, Malaysia. The Division coordinated with these organisations regarding India's participation.

- Notes were prepared on documents circulated by the ANRPC and IRSG Secretariats on various issues related to the organisations and rubber industry.
- Arrangements made to remit India's membership contribution to ANRPC and IRSG.
- During 2020-21, Indian delegations participated in the following virtual meetings:

- Annual Meetings of ANRPC in November 2020
- Seventh meeting of the Expert Group on NR Price Stabilization on 4 November 2020
- Second Meeting of Working Group on Sustainable NR on 5 November 2020
- Second meeting of ANRPC Technical Committee on Plant Protection on 3 February 2021
- Third and fourth meetings of ANRPC Task Force on Alternative Mechanism to solve rubber price problem in short term period on 3 November 2020 and 9 February 2021 respectively

5. ENGINEERING AND PROCESSING DIVISION

E&P Division headed by Joint Director (P&QC) has three sub-divisions viz., Engineering, Rubber Processing & Market Development (RP&MD) and Maintenance Division along with Central Quality Control laboratory and Central Wood Testing Laboratory functioning from Kottayam.

Core Objectives

The Division is primarily responsible for enhancing competitiveness and viability of the Indian rubber and rubber wood processing sectors in the global environment through focused development, by effective transfer of technology, improving quality and providing technical support services through consultancy services. The Division is responsible for:

- Providing technical / engineering services to rubber processors and manufacturers
- Implementing renewable energy technologies
- Implementing plan schemes under MTF scheme
- Facilitating technical consultancy services
- Engineering support for troubleshooting in processing factories
- Analytical and technical service to rubber and rubber wood processors

- Testing services for rubber wood and allied products at NABL accredited laboratories
- Technical guidance to Group Processing Centres (GPCs) and training to rubber smallholders for quality improvement
- Design and execution of engineering works of the Board
- Infrastructure Development and Maintenance of premises of the Board
- ISI marking of latex concentrates and block rubber collaboration with BIS
- Enforcing quality standards and Ensuring quality through export / import inspections
- Overall maintenance of all establishments / offices of the Board across the country

The Division is giving special emphasis to attain international standards in quality and packing of rubber to meet global challenges in rubber / rubber wood processing industry.

Internal and Extra Budgetary Resource (IEBR) Generation

E & P Division generated an Internal Extra Budgetary Resource of ₹ 59.29 lakh during 2020 – 21 through testing and consultancy fees / technical advisory service, lease rent for Model TSR factory / Pilot Latex Processing Centre factory/ recovery of outstanding loan/ working capital loan dues/ refund of share capital from the Board promoted Companies and Co-operative Societies. Besides, the Board received ₹ 2.40 crore as an additional IEBR during the reporting year from the Rubber Park, Airapuram, Ernakulam District by surrendering the 1000 MT godown along with leased land for their use.

Consultancy Services

E & P Division offered the following Consultancy services during the reporting year :

- Process and quality audit at M/s. Plantation Corporation of Kerala Ltd – total estimate of the work is ₹ 1.8 lakh. Audit first phase was completed at one of their factories.
- Process and quality audit at the TSR factory of M/s. Kerala State Co-operative Rubber Marketing Federation Ltd. – total estimate of ₹ 48,000 was approved.

- Technical Consultancy for modernization of Effluent Treatment Plant of the TSR factory of M/s. Plantation Corporation of Kerala Ltd – Submitted preliminary report.
 - Consultancy services for improving Estate Brown Crepe (EBC) processing, drying of Pale latex Crepe and Pollution control system at M/s AVT Ltd, Perinad estate.
 - Technical advisory Services to M/s. Kilkotagiri and Thiruvambadi Plantations Ltd - Inspected the Effluent Treatment System and submitted the report
 - Consultancy services regarding Modernisation of Cenex Unit of M/s Rajagiri Rubber and Produce Company at Punalur
 - Technical advisory in selection of Rubber Products for M/s AB Engineering, Changanaserry
 - Technical advisory services for obtaining BIS Certification for M/s. Arangath Latex, Chemmamattam and M/s S&S Trading Company, Kozhikode –visited the factory and provided technical guidance and imparted training on BIS certification of CENEX. Prepared all documents and submitted the application to M/s. Bureau of Indian Standards through online accreditation of ISO 9000 certification.
 - Conducted quality assessment and valuation of field coagulum, centrifuged latex, skim rubber and other waste rubber at the factories of M/s. Plantation Corporation of Kerala Ltd. and M/s. State Farming Corporation of Kerala Ltd. **Technical Agency for implementation of SFURTI in Northeast under KVIC**
- Engineering and Processing Division of the Rubber Board have been empanelled as Technical Agency (TA) for the implementation of Scheme of Fund for regeneration of traditional industries (SFURTI) of the Khadi & Village Industries Commission. The Division has prepared the DPR as per KVIC guidelines on Rubber Processing Cluster at Bharat Chandra Nagar Block of South Tripura for processing of latex and manufacture of value added products with an outlay of ₹ 233.8 lakh, which include ₹

14.5 lakh as TA cost and submitted for approval to KVIC Central office, Mumbai through Regional Office at Agartala.

Arbitration cases and recovery of loans

With the intention of recovering the long pending dues from Co-operative societies, the Board initiated arbitration cases against 21 Co-operative societies. Consequent to the frequent notices and continuous follow-up with the co-operative societies and processing companies, the Board received ₹ 11.38 lakh towards refund of loan and working capital loan during the reporting year.

5.1 Engineering Division

5.1.1 Civil Engineering

Civil Engineering unit has executed major constructions/modifications/repairworks to office/residential buildings/roads/compound walls etc. at Board's establishments all over India during the reporting year. Major civil works were done at RRIL, RTI, Head Office, Agartala and Guwahati in NE region and outstations.

Thirty civil works were executed for an amount of ₹ 331.81 lakh during the reporting year for maintenance of various establishments of the Board. Estimates for watering system for perennial crops at CES, Chethackal and installation of Work bench at RCPT, Rainwater harvesting, etc. were also undertaken which works out to ₹ 9.02 lakh. The Division also provided consultancy for setting up of processing centre and smoke houses of various types such as tunnel type, trolley type, conventional type etc. and collected consultancy fees. In total 39 works for a value of ₹ 352.27 lakh were executed during the year 2020 – 21.

Consultancy was provided to RBECHS Thiruvanchoor and Modernisation of centrifuging factory at Shaliacary estate of M/s Rajagiri Rubbers, Punalur on chargeable basis. In addition, consultancy services for setting up of processing centre and smoke house was also provided at NE region and other offices of Rubber Production Department.

5.1.2 Electrical Engineering

During the year 2020 – 21, the Division executed the electrical works, repair and

maintenance, Air conditioning maintenance works, etc. worth of ₹ 33.13 lakh for smooth functioning of Rubber Board and its various offices. Besides, the electrification of new hostel building in Rubber Training Institute and Farm house at Taranagar farm under RRS, Agartala were also undertaken, which works out to ₹ 61.54 lakh during the year.

The Division had proper liaison with State Electrical Inspectorate, Central Electrical Authority and State Electricity Board to carry out annual inspection and make the electrical installations work as per relevant standards stipulated by regulating authority.

5.1.3 Mechanical Engineering

Mechanical Engineering (ME) Unit undertook various works including preparation of bid documents and bid evaluation for machinery and equipment, supervising erection / commissioning of machinery, imparting training to factory personnel on machinery operations and maintenance, project evaluation and advisory work for rubber and rubber wood processing projects and monitoring the maintenance of Board's vehicles. During 2020–21, four project reports and three project profile/feasibility reports were prepared.

Other works completed are setting up of Rubber product manufacturing unit in Odisha, study of Solar assisted smoke houses for drying of sheet rubber, construction of Group Processing Center (GPC) in NE region under MTF Scheme and installation of Sprinkler Irrigation system at CN, Karikattoor and Water pumping system at CES, Chethackal.

5.2 Rubber Processing and Market Development (RPMD) Division

5.2.1 Commissioning of Rubber band unit at Kendugadi RPS, Odisha

For setting up of a Rubber band unit at M/s.Kendugady RPS, Odisha, all machines and chemicals were purchased from Kerala and transported to Baripada. E & P Division assisted them in the installation of machineries and successfully commissioned and closely monitored the functioning of the Rubber band unit for three months. Samples of domestic gloves are also produced in this unit. This is the



Launching of Mayur Brand Rubber Bands – A product of Kendugadi RPS.

first ever Rubber band unit in Odisha especially in the tribal hamlet of Mayurbhanj District.

5.2.2 Rubber Board Approved DRC Testing Laboratories

As a part of the restructuring, all Regional soil testing laboratories functioned under Rubber Research Institute of the Board are leased out to Rubber Board promoted companies to reduce the operating expenditure of the Board. A revenue generating model is also envisaged by collecting royalty @ 2% of testing fee from these laboratories. In order to issue approval certificate for the laboratories owned / leased by the Board promoted companies, joint inspection team from E& P Division inspected the dry rubber content (DRC) of latex testing facilities of 10 laboratories and issued approval certificate to them. The Board approved DRC testing laboratories have started functioning from 14th August 2020 and these laboratories are extending quality testing facility to rubber growers at affordable fee. E&P Division regularly monitoring the functioning of the testing laboratories and weekly and monthly reports are being submitted.

5.2.3 Scheme for innovation of machinery under MTF Scheme

The Board released ₹ 2.5 lakh during the reporting year to M/s Metro Wood, a rubber wood industry, under MTF scheme innovation of machinery.

5.2.4 Inspection and Certification.

Inspected the sheet rubber brought from NRETC, Andamans and issued grade certificate for sale of rubber. Carried out the visual inspection and certification of sheet rubber samples supplied by M/s.Lohasilpi, M/s. Mamparambil Rubbers and Bureau Veritas. Conducted technical inspection at M/s S&S Trading Company, Kozhikode and submitted the inspection report regarding the issue of Processors licence.

5.2.5 Leasing the factories and vacant premise

The Rubber Board leased out the following factories to the private entrepreneurs for effective utilization of the factory infrastructures in a productive manner and also, to generate IEER for the Board :

- Leased out Pilot Latex Processing Centre factory to M/s. Kakogan India Private Ltd. for ₹ 1.6 lakh per month for 5 year lease period.
- Leasing of Model TSR factory still continuing by M/s. Madapally Trading Company for ₹ 85,000 per month for 5 year lease period.
- After disposed off all machineries from Pilot Crumb Rubber Factory, leased out the factory building as godown to M/s. Malaya Rub Tech, Kochi for ₹ 25,000 per month.

5.3 Central Quality Control Laboratory

The Central Quality Control (CQC) Laboratory which was under the control of the Research Department was attached to the Engineering & Processing Division in November 2019. The Central Quality Control Laboratory is undertaking various tests for raw natural rubber, chemicals, fertilizers, water, effluent water etc., which is beneficial to the growers, processors and the general public. CQC Laboratory in association with Bureau of Indian Standards implements and monitors ISI marking schemes for processed rubber and also, conducted 87 random surprise inspections at BIS licensed and non-BIS licensed rubber processing units for checking quality of processed block rubber/ concentrated latex.

The Division plays a major role in the quality enforcement of processed NR in the country, quality of imported and exported rubber. The laboratory acts as Quality approval authority for issue of No Objection Certificate (NOC) for import of Natural Rubber.

5.3.1 Commercial Testing Section

The Division has conducted commercial testing on a charged basis. During 2020-21, the central QC lab tested 20,802 parameters and collected ₹ 21.41 lakh as testing fees.

5.3.2 BIS scheme of testing and inspection

During 2020-21, periodic inspections to the units under the BIS Scheme were completed and received an amount of ₹ 14.47 lakh as share of marking fees from BIS.

5.3.3 Quality control inspections at Rubber Processing Units

Conducted 174 random surprise inspections during the reporting year at the rubber processing units for checking the quality of processed block rubber/concentrated latex.

5.3.4 Quality Enforcement for TSR

Under the rule 48 of the Rubber Rules 1955, every processor shall grade and market his products in conformity with such standards as are specified by the Bureau of Indian Standards from

time to time. Further, the TSR purchased, sold or otherwise acquired or disposed of or possessed by any owner of estate, dealer, processor, manufacturer, importer and exporter shall fulfill the aforesaid norm. Necessary guidance and support was rendered for improved operation and quality certification of the processing units.

5.3.5 Import of Natural Rubber

It is mandatory that natural rubber (NR) imported to India shall conform to Indian Standard Specifications and NOC for import of NR is issued by Rubber Board. During the year 2020 – 21, the Board issued 3,643 NOCs for importing 405,952 MT of NR. Besides, the Central QC lab inspected and analyzed 160 samples from imported consignments during the year and all the samples conformed to BIS Standards.

5.3.6 Export of Natural Rubber

Rubber Board conducts quality checks to ensure the quality of rubber exported from the country and analyzed 58 samples at Central laboratory, before they are exported.

5.4 Central Wood Testing (CWT) Laboratory

The Central Wood Testing (CWT) Laboratory, which is an NABL accredited laboratory since 2009 for ISO / IEC 170025: 2017, the latest version of NABL certification, engaged in the following activities:

5.4.1 Testing and quality control

The CWT Laboratory facilitates testing of samples from various processors/ users / public and provides advice regarding quality control. During the year 2020–21, CWT Lab tested 1,386 samples under 104 batches and received ₹ 8.47 lakh as professional fees including testing / consultancy charges. CWTL is successful in maintaining NABL accreditation as per ISO/IEC 17025:2017.

5.4.2 Training, technical advice and project works

CWT Laboratory imparted training on wood processing & quality testing to students from different universities, and on data presentation, record testing & systems and standard

specification to ASAP students. Further, CWT provided technical advice to various stakeholders through phone/email.

Besides, CWT Lab facilitated B.Tech. (Polymer Technology) students from University College of Engineering, Thodupuzha to carry out the academic project on “Comparative study of the performance of Poly Vinyl Acetate Thermoplastic Wood Adhesive on four prominent Indian timber species as per EN 205:2003”.

Further, analyzed Mechanical properties of two Bamboo Species viz., *Thyrostachys siamensis* Gamble and *Dendrocalamus strictus* (Roxb) Nees (poaceae) out in collaboration with Kerala Forest Research Institute for an academic project of M.Sc. (Wood Science and Technology) student.

5.4.3 Consultancy service and achievements

CWT Lab continued the consultancy for NABL accreditation as per ISO / IEC 17025:2017, a latest version for TSP Quality Control Lab of M/s. KMMML and involved in “Layout design and onsite advices for installing machinery for setting up of a demonstration and training facility in wood treatment and seasoning at the college campus” under the CAAST-KAU project for College of Forestry, Kerala Agricultural University, Thrissur.

CWT lab refurbished the 22 year old Universal Testing Machine (Shemedzu - Japan) using indigenous technology and spares through Unique Calibration Solutions and equipment at New Delhi, which able to save the foreign exchange to the tune of ₹15 lakh.

5.5 Maintenance Section

Maintenance Unit of the E & P Division ensures continuous upkeeping, water supply, availability of electricity and other utility support such as Generator, UPS, etc. for the entire campus of Rubber Research Institute of India (RRII) at Kottayam including office/ laboratories, guest house, residential quarters, meeting halls/ auditorium and Rubber Training Institute located adjacent to RRII campus. Besides, the Unit also ensures the irrigation facility for seedling nursery / experimental field, smooth functioning of water

/ sewage pipelines and collection & disposal of solid wastes (bio and non-bio wastes) in RRII campus. In addition, the Division completed 36 maintenance works worth of ₹ 5.04 lakh on Swachh action Plan and ₹6.68 lakh worth of 38 works in infrastructural account (MTF). Solid waste collection and disposal of bio and non-bio waste from residential quarters, office, canteen and guest house were arranged throughout the year and incurred an expenditure of ₹ 3.15 lakh. Water supply and drainage works at Head Office, RTI and Central Experiment Station were attended on need basis.

During the year 2020-21, the Division attended 205 individual complaints regarding the repair and maintenance of water supply and sanitary installations at office, laboratories and staff quarters by deploying three pump operators and two skilled workers. Arrangements were made for the visit of VVIPs, organizing seminars / meetings and celebration of national days.

6. MARKET PROMOTION DIVISION

The Market Promotion Division consists of three units viz., Market Intelligence, Export Promotion of NR and Domestic Promotion of NR functioning at Kottayam.

Major functions of each section are furnished below:

6.1 Market Intelligence

Market Intelligence Unit collects, compiles and disseminates market price of different grades of Natural Rubber (NR). The Unit collected and published daily price of sheet rubber (RSS4 & RSS5 grades), block rubber (ISNR-20 grade) and centrifuged latex (60% drc) at Kottayam, Kochi and Agartala. Prices of higher grades of sheet rubber, block rubber and pale latex crepe were also collected and published on a weekly basis and price of scrap rubber thrice a week. International prices from Bangkok and Kuala Lumpur markets were also collected and published. Price data were disseminated through different media like newspapers, websites, IVRS and SMS. During the reporting year, 41 new subscribers were enrolled for SMS mode of price

Table 55. Price of Natural Rubber during 2020 – 21 (₹ per 100 kg)

Month	Sheet Rubber		Block Rubber		Latex 60% drc	
	Kottayam RSS 4	Bangkok RSS 3	Kottayam ISNR 20	Kuala Lumpur SMR 20	Kottayam	Kuala Lumpur
April 2020	NT	10394	NT	8405	NT	7349
May	11573	10538	10592	8319	8023	7647
June	12013	11438	10584	8720	8511	8640
July	12683	11518	10766	8903	8128	8355
August	13219	13012	10965	9782	7870	8493
September	13415	14400	10918	10049	7733	8719
October	14223	16112	11598	11185	8985	10365
November	15617	16963	12358	11617	10726	11390
December	15842	17071	12959	11608	10572	10760
January 2021	15188	15876	12610	11572	10871	10137
February	15604	16355	14110	12305	11489	10754
March	16659	16894	15013	12758	12754	12260
Average	14185	14214	12043	10435	9606	9572

dissemination. Daily natural rubber (NR) prices were uploaded on Board's websites www.rubberboard.gov.in and www.indiannaturalrubber.com. NR Price trend in the domestic and international market during the year 2020–21 is furnished in Table 55.

Indian NR price generally move in tandem with global NR price. In the global market, price moved from ₹ 105 per kg in the beginning of 2020, then to ₹ 130 per kg, ₹ 150 per kg and reached ₹ 185 per kg in the second week of December. After that, showed a declining trend and hovered in the range of ₹ 150 to ₹ 170 per kg. Domestic prices of NR showed a declining trend in March – April 2020 due to Covid-19 pandemic and lockdown. The price of RSS 4 during this period hovered in the range of ₹ 115 to 130 per kg, but gradually moved to ₹ 150 per kg in middle of October, ₹ 164 per kg in December 2020, and reached to ₹ 171 per kg in March 2021.

6.2 Export Promotion

Rubber Board being the Export Promotion Council (EPC) for NR is mandated to issue/renew RCMCs (Registration-cum-Membership Certificate) for export of NR. 11343 MTs of NR

has been exported during 2020-21 with 76% in the form of Centrifuged Latex, 16% as ISNR grade, 4% as RSS grades and 4% others. Export was mainly to China, Brazil, Iran, Belgium, Malaysia and Turkey. Details of exports during the financial year is furnished in Table 56.

Table 56. Different forms of Natural Rubber exported during 2020 – 21

Natural Rubber HS Code 4001	Export Volume (MTs)
Centrifuged Latex	8,663
Ribbed Smoked Sheet	369
Block Rubber (ISNR)	1855
Other Forms of NR	456
Total	11,343

6.3 Domestic Promotion

Regular monitoring of NR imports has been done by Market Promotion Division. As per data available from the Directorate General of Commercial Intelligence and Statistics (DGCI&S), the country imported 4,10,473 tonne

Table 57. Import of NR from various countries under different channels, 2020-21 (p)

Channel wise Import		Country wise import (MTs)		Grade wise import	
Channel	%	Country	Volume	Grade	%
Duty Paid	61.34	Indonesia	1,61,325	RSS grades	11.89
DEEC	30.39	Vietnam	74,796	Solid Block Rubber	86.41
DFIAS	0.02	Cote D Ivorie	46,227	Latex Concentrates (drc)	0.85
Others (EOU)	8.25	Malaysia	37,265	Others	0.85
		Thailand	31,821		
		Others	59,039		
Total	100.00	Total	4,10,473	Total	100.00

(p) – Provisional

of NR during 2020-21 as compared to 4,57,223 tonne imported in the previous year.

Other activities undertook by the Board as part of Market Promotion during 2020-21

1. Branding of NR - The brand Indian Natural Rubber is awarded to export consignments of NR on confirmation of quality parameters defined by the Board. The quality features are ensured by carrying out necessary laboratory tests and inspections. During the reporting year, almost 45 % of the NR exported was under the brand Indian Natural Rubber. Brand certificates were issued after inspecting the export consignment and quality testing.
2. Scheme for branding of Natural Rubber - An incentive scheme for export of concentrated latex grades under ITC HS 40011020 has been operational during the last financial year. The main objective of extending financial assistance for branding of NR was to encourage export of branded NR and to offset the additional cost involved in branding. Branding distinguishes Indian NR in the international market with its discerning quality features. Board formulated quality criteria for branding and each export consignment under the brand will be inspected before shipment to ascertain compliance for branding.

3. Export Promotion of rubber products - Proactively assisted in rubber product export, especially, rubber mats and gloves by developing short videos for publishing in Rubber Board YouTube channel.
4. Export - import documentation through e-SANCHIT portal - Facilitated data integration with e-SANCHIT portal hosted by Central Board of Excise & Customs.

Details of import through various ports under different channel are given in Table 57.

5. E-trade platform for NR - Rubber Board is in the process of developing an e-trade platform for rubber which is an electronic market for trading different NR grades. In order to develop software to run an online trading system, shortlisted a Joint Venture Partner M/s. i-Sourcing Technologies Pvt. Ltd, Ahmadabad, will provide all software supports and operational assistance for e-trade platform and software development for e-trade is in progress.
6. Virtual Trade Fair for rubber products - Expression of Interest (EoI) released for identifying a vendor to develop software for Virtual Trade Fair for rubber products and data collection is being done.

PART - XI

LIST OF MEMBERS OF THE RUBBER BOARD AS ON 31.03.2021

The tenure of the last Board expired on 30 May 2020.

**No new Board was re-constituted by Government of India
during the reporting year.**

TRANSACTION AUDIT/THEMATIC AUDIT OF THE RUBBER BOARD FOR THE YEAR 2017-18

Audit Para No.	Subject	Details of Replies Furnished as on 15.10.2018
Part II A Para 1	Loss of Rs 26.36 Crore to the Board due to closure of Rubber Wood India Pvt.Ltd.	The loss of 26.36 Crores to the Board due to closure of M/S Rubber wood India (P) Ltd may not be considered as a complete loss to the Board since the socio economic factors like better price for rubber wood, Employment generation and women empowerment, Development of the area, overall development of the rubber wood sector, Environmental benefits etc, were achieved through the company.
Para 2	Procurement of Genetic Analyzer – Avoidable expenditure of Rs 1.30 Crores	Genetic Analyzer is an integral part of the major infrastructure of any modern molecular biology laboratory. RRIL purchased the equipment considering the ongoing and anticipated sequencing work load. The machine could not be utilized fully due to the following reasons
a)	SSR genotyping requires consumables to process the samples. We have already accumulated around 300 DNA samples ready for fragment analysis which require at least 30 lakhs. Due to non availability of sufficient funds, these are kept pending.	
b)	The consumables for running the Genetic Analyzer are expensive	
c)	Considering the financial constraints of RRIL, reactions were kept to the bare minimum based on the priority of the samples to be tested	
d)	The delay in completion of whole genome project has seriously affected the utilization of this machine also	
e)	The proposed meta genome Project which requires extensive DNA sequencing of thousands of samples also could not be initiated due to constraints in funds	
Para 3	Closure of MTSRF and payment of Rs 2.18 Crores to the workers without any work	At present we have transferred 29 workers of MTSRF to farms of the Board and remaining 11 workers were retrenched

Part II B Para 1	Non-remittance of Rubber CESS amounting to Rs 2.09 Crores to Consolidated Fund of India	We have retained the amount as Deposits in connection with the Demand Notices received from Central Excise, Customs and Service Tax. Board did not accepted the demand and has filed appeal and expected to receive a favourable order. In such a case, the CESS retained will be remitted to the consolidated Fund of India.
Para 2	Next generation DNA sequencing of rubber trees – Infructuous expenditure of Rs 40 Lakhs	The work was awarded to M/S Xcelris (L3) since L1 and L2 did not meet the tender specifications. Since we made full payment to the Mile stone I (data generation), RRII has full right on the data and M/S Xcelris has no ownership whatsoever. We have a full time bio informatics scientist at Genome Lab,, RRII who is now has the required expertise in handling large volume NGS data
Para 3	Performing of DArT sequencing without the approval of SERB	It was clearly stated in the project approved by SERB on 15th June 2017 that “Genotyping of the segregating population will be carried out through DArT sequencing at Diversity Array Technology, Canberra, Australia”. This was approved by SERB. KASP facility was available at University of Adelaide where the Principal Investigator of the SERB project was on a Research Fellowship of the Australian Government during 22nd Nov. 2017 to 21st May 2018. So permission was requested to procure consumables to carry out KASP assay utilizing the equipment and software at University of Adelaide. That would be cheaper than outsourcing KASP assay to LGC, UK as originally proposed in the SERB project
Para 4	Loss of potential IEER due to non-response to business opportunities	Though M/S Navasakthi Trust requested Board’s permission to stamp the logo of the Rubber Board on their products for marketing purpose, Board did not consider their request as we did not have a policy on this matter. Rubber Board has not undertaken commercial branding of any rubber products so far. While sharing the logo, Rubber Board has to assure the quantity/quality of the products which require withdrawal of samples frequently from the market. Currently the Board has no infrastructure/ authority for such activities. However this point will be taken up and a sound policy could be arrived in future so that Rubber Board can earn more IEER.
Para 5	Loss of Rs 2 Crores due to non collection of technology transfer fee	We have not disclosed the technology to M/S MRF. Providing a sample compound is not equivalent to transfer of technology. The technology is kept confidential with us. We have already taken steps for patenting the innovation.
Para 6	Lower yield from the plantations of the Board	The reason for low yield is due to senile/nature of the tree/tapping in panel C & D/plantation situated in highly elevated area and powdery mildew etc.

Para 7	Construction of Godown- Idle investment of Rs. 2.04 Crores	Earnest efforts are continuing to leasing out the Godown or surrender the Godown to M/S Rubber Park India Pvt. Ltd itself.
Para 8	Supply of Rubber Plantation Inputs with price concession- Payments pending from Nodal Companies	The companies were reminded on repayment of the soft loan with the interest payable to Rubber Board many times. Meetings of the MDs of Nodal Companies were convened on 11/9/2017 and again on 19/1/2018 and instructed to refund the amount at the earliest as scheduled. Accordingly 70 % of the amount due is paid so far. Earnest effort is being taken to see that repayment of soft loan availed buy the Nodal Companies are completed at the earliest.
Para 9	Booking Tickets from Private travel agencies and travel by private airlines	We have sanctioned travel through private airlines in few unavoidable and urgent cases only. The audit para is noted in true spirit for future guidance.

OUTSTANDING PARAS IN THE INSPECTION REPORT OF INTERNAL AUDIT WING (MOC) FOR THE PERIOD FROM 01/04/2012 TO 31/03/2016.

Audit para No.	Subject	Details of Replies Furnished
Para 1	Outstanding amount of Rs. 4.95 Crore of CESS collection	<p>The arrears of CESS noted in the Audit, Rs.4.95 Crores pertain to the year from 1961 to 2016. CESS is collected from the manufacturers on the quantity of rubber purchased by them as shown in the half yearly returns submitted to the Board. Board issues license to manufacturers only for a year. Renewal of license is considered only on furnishing of all pending returns and payment of pending Excise Duty. The system works as a major mechanism to ensure payment of pending Excise Duty. On cases of default, reminders were sent to defaulters invoking the provisions of revenue recovery. Simultaneously Board's field machinery conducts inspections of these units and persuades the manufacturers to remit the amount. If the unit had stopped manufacturing operations or if the unit fails to remit CESS, the case is referred to the District Collector for initiating revenue recovery proceedings. Moreover, Board sends reminders to the Revenue authorities to expedite recovery process. Besides, Board's field machinery establishes direct contacts with the authorities concerned to expedite recovery wherever the recovery is possible. An effective system is in place to follow up revenue recovery cases, an Arrear Clearance Cell at Head Office, to monitor each case. Majority of payments in arrears over 10 years are irrecoverable, as the revenue Recovery authorities as well as Board's field machinery has found that the concerned units did not possess any assets or the present whereabouts of the owners are not known. Moreover, the dues are collected along with applicable interest</p>

Para 2	Blockade of Government money of Rs. 61,26,973/- on account of outstanding Sundry Debtors (MTSRF-Rs.56,66,648/- & PCRFB – Rs.4,60,325/-)	<p>Rs.55,10,325/- is the refund due from M/s Ponmudi Rubbers Ltd to MTSRF. This amount was lent from MTSRF as temporary loan on different spells for promoting trade/export. Due to the unfavorable market conditions, the company has closed down the Factory. M/s Ponmudi Rubbers Ltd is having immovable property of 5.5 acres of land with factory building. A decision will be taken in the coming AGM of the Company to dispose off the properties and settle the dues of the Rubber Board.</p> <p>Rs. 1,56,223/- is due from M/s V.M Ashraf Traders, Erattupetta to MTSRF on account of DRC variation in the cost of raw material supplied by them. Legal proceedings have been initiated (vide Case No. AS.229 of 2013 before the District Court, Kottayam) against the party for recovering the amount.</p> <p>Rs. 4,60,325/- is the amount due from M/s Kavanar Latex (P) Ltd towards cost of materials supplied from PCRFB. Based on our frequent reminders, the company has agreed to remit the dues within 2 months (August 2017).</p> <p>Rs. 100/- due from M/s R1 International towards the cost of tender forms. Since this is a meagre amount, action has already been taken to write off the amount from the Books of Account during 2017-18._____</p>
Para 3	Outstanding loan of Rs. 15.89 Crores against various Companies and Co-operative Societies.	<p>Outstanding amount of 15.83 Crores as on 31/03/2015 is to be recovered from various companies and Co-operative Societies. Due to the actions and frequent notices issued by the Department, an amount Rs.6,08,316/- was realized from the Societies during the FY 2016-17. We have initiated legal proceedings against the defaulting Cooperative Societies and the latest position is attached in Annexure I.</p> <p>An amount of Rs. 1,25,000/- was remitted by 2 Co operative Societies after 31/03/2017.</p>

		<p>The RPS companies were promoted by Rubber Board with the noble objective of protecting the growers from the exploitation of middle men. The companies provide direct employment to people belonging to socially and economically weaker sections.</p> <p>These Companies were suffering from acute shortage of working capital and Rubber Board supported them to overcome the financial crisis. However the Rubber Board has directed these Companies to settle their dues to us at the earliest. During the FY 2016-17 an amount of Rs. 3,49,480/- was remitted by M/s Kavnar Latex Ltd towards refund of loan.</p> <p>We have already issued Demand Notices to all processing companies. for settling the outstanding dues. Based on our demand notice, M/s Pamba Rubbers Ltd has initiated action to dispose of the machinery lying idle in the factory. The upset value of machinery fixed was Rs. 24.90 Lakhs. Since Rubber Board is having 1st Charge over the assets of the Company, our dues will be settled on priority basis.</p>
Para 7A	Purchase of Air Tickets from Unauthorized Travel agents	<p>The Audit observation is noted. In order to comply the same, Board has entered into an agreement with M/s Air India Ltd., with effect from 01/06/2017 for purchase of tickets directly from them. All cases of deviations, if any in future will be referred to the Financial Advisor of the Ministry of Commerce as per OM No. 19024/1/2009-E.IV dated 07/06/2016</p>
Para 7B	Air travel other than the AIR INDIA	
Para 8	Recovery of Rs. 2.25 lakhs on account of delayed supply of stores	<p>The liquidated damage clause @ 2% for delay of supply was not included in the tender condition. The nominal delay in supply was not affected the purpose of purchase. However the observation of the audit to incorporate the liquidation damage clause is noted for further compliance.</p>
Para 13	GPF subscription recovered in excess of maximum limit.	<p>The Audit observation is noted and Action has already been taken for regulating the GPF subscriptions as per Rules. The excess interest paid is also recovered.</p>

Para 14	Outstanding EMD Rs. 22,66,460/- and SD of Rs. 18,0,047/- since long.	Out of Rs.2,33,580/- EMD outstanding, an amount of Rs.1,43,580/- has been forfeited / refunded and the balance amount of Rs.90,000/- will be settled by payment or by forfeiture within the time limit. Out of Rs.1,48,303/- Security Deposit outstanding, an amount of Rs.54,764/- has been forfeited and necessary book adjustment entries made in this regard and the balance amount of Rs.93,539/- will be settled by payment or by forfeiture within the time limit. Hence the para may be dropped.
---------	--	--

OUTSTANDING PARAS IN THE INTERNAL INSPECTION REPORT OF RUBBER RESEARCH INSTITUTE OF INDIA UNDER RUBBER BOARD FOR THE PERIOD, SINCE INCEPTION TO 31/03/2016 BY INTERNAL AUDIT WING MOC

Audit para No.	Subject	Details of Replies Furnished
1.1	Implementation of FCS in RRII from 06/07/2006-objections raised by CAG.	FCS is a career advancement scheme as distinct from ordinary seniority based promotions, that are dependent on vacancy position. Under FCS the Pay band and Grade pay only upgraded as in MACP and post not upgraded and hence there is no creation of posts. Scientists have obtained Stay Order from the Hon'ble High Court of Kerala and now this issue is pending for final decision from the Hon'ble High Court.
1.2	Assessment and Screening	CAG has noticed that Second Level Assessment was done by the Committee consisting of majority of internal members. Please note that assessment done in June and July 2014 were as per old FCS in which there was no such condition and the condition of majority of outside experts is prescribed in Modified FCS only.
1.3	Recruitment Rule not amended	CAG has observed that recruitment rules not amended on implementation of FCS. We have originally implemented FCS as per DOPT norms. We are now taking action to amend the Recruitment Rules as per Modified FCS conditions.
1.4	FCS promotions given with retrospective effect	We have sanctioned FCS with retrospective effect as there was some delay in assessment of Scientists and hence with intention of avoiding denial of timely promotions to Scientists. However based on CAG remarks we have not given pay fixation to 25 Scientists promoted from C to D and 13 Scientists from B to C, as per Office Memorandum No.3/25/1(1)/2014/EST dated 08/08/2014.
1.5	FCS sanctioned to non-scientific activities	CAG has observed that FCS was implemented to personnel engaged in non-scientific activities such as Economics, Statistics and Testing Lab etc. Kindly note that we have no Scientists in Statistics. Economic Research Division is part of RRII doing field research on economic aspects of rubber. Regional Testing Labs are part of Research Division and Scientists are working there for conducting field trials.
1.6	Simultaneous operation of seniority based promotion as well as promotion under FCS	Based on CAG objections the promotions given on seniority basis were cancelled and pay re-fixation done w.e.f. 01/01/2013. However recovery of excess drawn salary on such promotions up to 31/12/2012 is pending.
1.7	Clarification on interpretation of the term "up to the level of Scientist C"	CAG has observed that Ministry has approved implementation of FCS up to the level of Scientist C only and hence FCS promotion from Scientist C to D is not permitted. Now the Ministry has clarified that FCS is applicable up to the level of Scientist C only and hence Board is not in a position to grant promotion from Scientist C to D. However this issue is pending before Hon'ble High Court of Kerala.

2	Loss on account of theft of copper conducting wires.	We have filed a case against the loss of copper conducting wires before the Circle Inspector of Police, East Police Station, Kottayam. They have prepared a First Information Report and the matter is being followed up with the Police.
3	Non-maintenance of Asset Register in Form D-4	We are maintaining Asset/Stock Registers as per GFR 40, 41 & 42. Action taken to maintain Asset Register in Form D-4 in future.
4	Non-maintenance of Service Books in duplicate.	Regarding GFR Rule 257, it is requested that we may be kindly exempted in this regard based on the following grounds: Even though we are not giving copy of Service Book to staff, we are keeping it properly bonded and under safe custody, in charge of responsible officers and also shown to each staff every year and get it signed by him. There is a proposal by Govt. of India to maintain SBs in electronic mode. Under the present poor financial condition of the Board and considering the cost, issuing duplicate SBs to all the 1500 employees is difficult. We have taken action to scan the SBs, update every year and to upload in our website so that each employee can have access to his/her Service Book. However it is requested that as the present system is safe and since issuing duplicate involves huge expenditure that is not bearable in the present financial crisis of the Board, it is requested to kindly drop the Audit para.
5	Certificate in bills for supply of light refreshments.	Necessary instructions to certify in all bills for expenditure on light refreshments as mentioned as per OM No.7(3)/E-Co-ord/2013 dated 06/05/2015 issued.
6	Non-maintenance of NPS Detailed Ledger Account.	Necessary instructions issued to maintain a detailed ledger account of all NPS Subscribers with one folio to each subscriber.
7	Non-maintenance of Register of Contingent Charges in Form GAR-27.	
	Necessary instructions issued to maintain Register of Contingent Charges in Form GAR-27. Instructions regarding this will be communicated to all concerned.	
8	Disposal of unserviceable and obsolete items.	For the disposal of unserviceable and obsolete items, action is in progress.
9	Non-constitution of Research & Development Committee.	Necessary action taken for constituting R & D Committee. The term of the previous Board expired on 28th February 2014 and the reconstitution was done in May 2017. The R&D Committee was constituted in the 175th meeting of the Board held on 10th October 2017.
10	Shortage of funds faced by RRII.	Audit remarks noted by higher authorities of the Board.

OUTSTANDING PARAS IN THE INTERNAL INSPECTION REPORT OF RUBBER RESEARCH INSTITUTE OF INDIA UNDER RUBBER BOARD FOR THE PERIOD, 01/04/2016 to 31/03/2019 BY INTERNAL AUDIT WING MOC

1	1(A) Irregular grant of in situ promotion to Non Scientific Person under FCS resulting loss to Govt	<p>Division Bench of Hon. High Court of Kerala vide its judgment dt 28/07/2020 in WP(C) No 19565/2015 and connected cases have set aside and ordered that financial up gradation under FCS to the level of scientist D with Grade pay Rs7,600/- may be granted as per order F.No 7/1/2015-plant C dtd 11/11/2019 only. Promotion awarded with retrospective effect may be cancelled, promotion as Dy. Director and Jt. Director from the date of implementation of FCS in RR II may be cancelled. Action is being taken to re-fix pay of Scientist and recover excess payment if any according to Office Order No1048 & 1049 issued.</p> <p>Also FCS is not applicable in the case of Officials with Masters degree in Economics, Statistics etc and may be reviewed based on Office Order No 1048 & 1049</p>
	1(B) Avoidable Audit objections and litigation due to improperly implemented Flexible complementing Scheme (FCS) for Scientists –delayed communications with the ministry	
2	Justification of non continuance of scientific posts abolished in RR II by Rubber \ board	<p>As per the direction from the ministry vide letter No.8/6/2017-Plant –C dt 11/9/2017 instructing Rubber Board to reduce staff strength from 1977 to 1649 due to Budget constraints, the Board vide Office Order No.3/23/2018/EST dtd 2.2.2018, from all Departments of Board 328 post were abolished out of which 34 post were lying vacant more than 5 years and 294 are non essential posts lying vacant. This includes 18 posts of Scientist A in RR II and is due to instruction from Ministry the para may be dropped.</p>
3	Explanation for ignorance of senior employees of Rubber Board while giving temporary status and non execution of Court Orders under DOPT Scheme for Casual labours	<p>Sri A M Sabu and Biju Mathew, whose names were noted in the audit para were casual workers doing maintenance work, were in temporary status later appointed as last grade staff based on the Judgement of Hon'ble High Court of Kerala, where as Sri Hari Bahadur Thappa and 38 others were permanent workers in the rolls of farm under the plantation Labour Act 1951 and were granted monthly scale of pay. No order from Hon'ble High Court of Kerala to appoint them as last grade employee</p>

4	Expenditure on pay and allowances out of budget granted under plan scheme	The Audit remarks, that the Board has spent only Rs73 lakhs on research(ONE) and Rs.11.85 lakhs on NE region is not factual as pay and allowances of scientists and staff of RRII is part of expenditure towards research activities and we spent Rs 25.46 crores during 2018-19 and Rs28.80 crores during 2017-18, out of the total expenditure of Rs.193.49 crores during 2018-19 and Rs. 212 crores during 2017-18. As RRII is one of the department of Rubber Board any cut in the sanctioned budget of Rubber Board will affect all departments of the Board, Including RRII
5	Diversion of fund to pension fund on the cost of Research Activities	Please see that RRII is only a Department of Rubber Board and any cut in the sanctioned Budget to Rubber Board will affect fund allocation to all departments of the Board including RRII. Rs 165crores mentioned above is the total receipts in the pension fund A/c during the year, whereas the actual closing balance as on 31.3.2019 is Rs73.94 crores, only Contribution from Rubber Board Rs13.74 Crores is as per GFR towards employer's contribution and transfer from IEBR Rs23.90 Crores is as approved by Ministry
6	Filling of more non scientific posts in RRII as compared to Scientific posts	Please see that RRII is only a Department of Rubber Board and appointments of all staff including Scientists were made as per sanctioned post by ministry. Many posts were lying vacant in RRII and other departments due to ban and budget cut by ministry .After the audit by IAW, the Govt. of India has done a cadre restructuring of Rubber Board and the matter was addressed. Action is being taken for restructuring and the query may be dropped

7	No data provided to show the benefit of researches of RRII reaching to growers	RRII have developed location specific high yielding clones and good agricultural practices for sustainable and profitable cultivation of natural rubber in diverse agroclimatic regions of India. Rubber Production department is directly disseminating scientific planting, tapping, disease control knowledge to rubber growers. However RRII provide help for soil testing and advise for disease control on demand by the growers. Close co-ordination by the Research and Rubber Production Department has been established to make benefits of R&D findings reach growers. The Research activities of the RRII are implemented through Rubber Production Department resulting which more than 99.90% of the growers cultivate only the clones developed by the RRII
8	Non taking up project capacity to boost the IEBR	After the audit by the IAW several steps were initiated to increase IEBR. A Rubber Products Incubation Centre has also been commissioned to support rubber industry. Govt of India has approved a REACH lab, a Rubber Product testing lab (to regulate quality of rubber products imported to India) and a latex laboratory to promote latex products such as gloves are under consideration. These activities will help increase IEBR, services to small growers will continue free of cost or at nominal fees
9	No expenditure on required inspections, attending seminars, meetings with other member countries etc.	Fund allotted to RRII is based on Budget sanction to Rubber Board from Ministry and any cut in sanctioned Budget will affect research activities also
10	Not taking initiatives for process of latex in to various forms of dry rubber etc.	As per Rubber Act 1947 Rubber Board is not authorized to undertake any commercial activities. The few factories operated were started as pilot R&D processing units to educate industries and for research purpose only
11	Non taking up project of Tyre Testing Laboratory having capacity to boost the IEBR	RRII has made all efforts to get Tyre Testing Station sanctioned, but was not materialized due to fund constraints although this was included in the XII Plan EFC
12	No AMC of Machinery and equipment	Fund allotted to RRII is based on Budget sanction to Rubber Board from Ministry and any cut in sanctioned Budget will affect research activities also and in many cases AMC could not be taken. After the audit by IAW, this issue has been addressed.

13	Contributions from General fund of the Board towards Pension fund in excess of admissible limit	Rubber Board Pension Fund is operated as per rules only and no funds allocated for research activities ever diverted to pension Fund A/c
14	Irregularities in TA Claim	The matter will be examined and action will be taken to rectify the error , if any
15	Irregularities in LTC Claim	The matter will be examined and action will be taken to rectify the error , if any