Rubber Research Institute of Sri Lanka

Action Plan 2023

Content

RUBBER RESEARCH INSTITUTE OF SRI LANKA

Introduction

The origin of rubber research in Sri Lanka goes back to 1909, when a group of planters in the Kalutara District got the service of a chemist to study the coagulation of rubber. This was later expanded to form a Rubber Research Scheme in 1913 and then named as the Rubber Research Institute of Ceylon (now Sri Lanka) in 1951showing that the Rubber Research Institute of Sri Lanka (RRISL) is the oldest Research Institute on rubber in the world. It has a proud record of service to the industry, in plant breeding, agro-management practices and the chemistry of raw rubber.

RRISL is the nodal agency in Sri Lanka having the statutory responsibility for research and development (R & D) on all aspects of rubber cultivation, processing and product development for the benefit of the rubber industry. The institute carries out R & D on agronomy and biology of the crop, the chemistry of natural rubber and technologies of product manufacture together with environmental and socioeconomics aspects of all subsections. Further, the institute is committed towards technology transfer activities and training of extension personnel and other stakeholders. Accordingly, it has five biological research Departments. i.e. Plant Science, Genetics & Plant Breeding, Plant Pathology & Microbiology, Soils & Plant Nutrition and Biochemistry & Plant Physiology and four Chemistry and Technology Departments i.e. Raw Rubber Process Development & Chemical Engineering, Raw Rubber & Chemical Analysis, Polymer Chemistry and Rubber Technology & Development. Technology transfer is carried out by the Advisory Services Department together with the unit/section of Adaptive Research, Biometry, Agricultural Economics and Audio Visual & Information Technology. Administration department, Accounts section and Works section support the R & D activities conducted by the above departments and units / sections.

Organizational Structure and Arrangements

The organizational structure is summarized in Diagram 1- (page10).

Assignment of Responsibilities, Authority and Accountability

The Director as the Chief Executive Officer of the Institute is responsible for all the research and development activities, and administrative and financial affairs of the Institute under the general direction and control of the Rubber Research Board. The responsibility and authority for execution of the research, advisory and administrative plan of each department lies with the Head of the relevant department/section. The Deputy Directors are expected to assist the Director and Additional Director in discharging their executive functions in the relevant subjects.

Authority of the Organization

According to the Rubber Research Ordinance (No. 10 of 1930), a Rubber Research Board has been established for the purpose of furthering and developing the rubber industry. The Board governs a Rubber Research Institution with the view of managing, conducting, encouraging and promoting scientific research with respect to rubber cultivation, processing and product manufacture and also, dealing with all issues connected with the rubber industry. The areas covered are development of new clones, production of quality planting material, cultivation and management of rubber plantations, prevention and cure of diseases, pest control , harvesting rubber trees for latex, soil and moisture management, rubber based farming systems, expansion of rubber cultivation to new areas and impact assessment on rural livelihood, carbon sequestration & environmental impacts, raw rubber processing and conversion into marketable products, treatment of rubber factory effluents and providing of advisory services. This Ordinance has been amended from time to time; the most recent introduction has been the “Rubber Research Bill Part II of April 2003 with the amendment No. 28”.

Our Clients

Management staff and workers of all Estates and Smallholders are important clients of the institute. Close links have been established between all these groups by constant interactions. The raw rubber and rubber product manufacturers, the consumers of raw rubber and raw rubber latex exporters are the other groups of institute’s clients. Along with other sister organizations such as Rubber Development Department and Thurusaviya Fund, RRISL caters to the needs of the smallholders and assists them in selling latex to centrifuged latex factories or in producing quality smoked sheets. Emphasis is given for marketing of rubber and also to introducing new technologies to rubber growers and small-scale industrialists. Further clients are supported with trouble shooting and testing facilities.

THE VISION, MISSION STATEMENTS AND OBJECTIVES

Vision and Mission

The institute's vision is to emerge as the center of excellence in providing high quality scientific technologies to the rubber industry. Its mission is to revitalize the rubber sector by developing economically and environmentally sustainable innovations and transferring the latest technologies to the stakeholders through training and advisory services.

Objectives

The broad objective of the RRISL is to assist the Government of Sri Lanka (GoSL) in the sustainable development of the rubber industry by providing required technologies. Based on the policy for the Plantation sector, we expect the rubber industry in the country to be competitive in the international arena by capturing significant market share and also assuring decent living of plantation community in the country. Strategies proposed to be implemented are given below.

- Considering the existing level of popularity for rubber in the area, suitability and land availability for further expansion, two regions for rubber cultivation in the country are identified for focus oriented R&D activities.

  - ❖ A rubber triangle comprising Kalutara, Ratnapura and Kegalle districts is identified as a mega zone for rubber cultivation in the traditional rubber growing area. Since spare lands for further cultivation of rubber in this zone is limited, productivity increase is the focus in this zone. RRISL will provide sufficient technologies and suitable protocols targeting an average productivity of over 1500 kg/ha/-year by 2025 in this zone. To be competitive at international level, cost of production is expected to be kept below USD 2/kg for plantation companies. In line with other development programmes of GoSL, RRISL assist small & medium scale entrepreneurs to set up rubber industries in environmentally friendly manner by providing required technologies to do so.

  - ❖ Another mega zone for rubber in drier climate comprising Monaragala, Ampara districts and Anuradhapura is identified to expand the rubber cultivation for increased production. Whilst assisting GoSL to meet a target of 30,000 ha of rubber in this region, RRISL will provide improved protocols to maintain an average productivity level of 1500 kg/ha/year by 2025. Solar energy is promoted as the principal energy source for rubber industry in this zone. In addition, rubber is promoted in this zone as a means of sequestering atmospheric CO_2 targeting carbon trading in voluntary market. Farming system approach is encouraged to increase land use efficiency and farmers' income further.

- In addition to above the two mega zones, RRISL is engaged in promoting rubber in other regions of the country on demand basis.

- In order to meet the targets set in above approaches, agronomic research are focused on developing sustainable and user-friendly agronomic practices and disease resistant, environmentally robust high yielding genotypes for improved productivity and greater level of farmer acceptance. Rubber technological research will cater mainly the small & medium entrepreneurs and develop products for high level of value addition and for niche markets. Also, information is generated with required technologies to promote rubber as an environmental friendly industry. Further, impact guaranteed technology programmes are advocated mainly in mega zones in support of achieving set targets.

Research Departments/Units

Research departments & units of RRISL are to carry out research and development work and dissemination of outputs to the relevant sectors through extension network in view of meeting the objectives through the strategies mentioned. Considering the upstream and downstream segments of the industry, they are categorized into two as rubber agronomy and technology.

Agronomy

Agronomy departments conduct research and development activities on all aspects of the growth of the rubber tree and its productivity. Research activities on breeding clones for high yields, disease resistant, vigorous growth, tolerance to gaseous stimulation and increased timber production are given the highest priority. Also, reduction in cost of production with efficient uses of resources is the key focus in research. Further, research and development activities have been commenced on the expansion of rubber cultivation to nontraditional areas. The Advisory Services Department is catering to the needs of the smallholders. Whist Genetic & Plant Breeding Department is located at Nivithigalakale substation, Mathugama, other four biological research departments and three supporting units are functioning at Dartonfield, Agalawatta. The Advisory Services Department is located at Telawala Road, Rathmalana.

1. Genetics & Plant Breeding Department

Main objective of this department is to develop clones with high yield potential combined with desirable secondary characters. In order to achieve this, clones are produced by hand pollination and resulting new genotypes are tested first under small scale and then in collaboration with estates and also under smallholder conditions. Among the secondary characteristics; growth vigour, tolerance to diseases, resistance to wind damage & brown bast, high timber volume etc. are considered important. Research work is also conducted towards early identification of clonal characters using RADP techniques.

2. Plant Science Department

The broad objectives of this department are to identify and recommend cost effective techniques from plant production up to latex harvesting which would maximize the productivity. The quality of planting material is improved constantly. Planting techniques to improve the performance of the clearings and also methods of exploitation to cut down on cost of production (COP) are researched. Cultural practices during the immature phase along with intercropping are also looked at and recommendations are made where necessary. Plant physiological research is conducted to help increase the productivity and tissue culture work is also continued with some progress. Apart from research and advisory work, this Department is also involved in activities to ensure high quality plant production for the sector through regular monitoring of all rubber nurseries.

3. Soils & Plant Nutrition Department

The main trust areas are research on improvement of soil fertility, increasing fertilizer use efficiency, soil & water conservation and weed control. This department also provides services such as site-specific fertilizer recommendation for mature rubber, land selection for planting rubber and chemical analysis of soil, plant and fertilizer samples.

4. Plant Pathology & Microbiology Department

Centre for planning, implementation and management of research on (a) all aspects of the maladies of the rubber plantations and (b) improvement of beneficial soil micro flora. Main research projects include screening of clones for disease resistance, testing pesticides, development of integrated pest management systems, biology and epidemiology of pests and surveillance of potential pathogens & disease out breaks.

5. Biochemistry & Plant Physiology Department

This department aims to meet the needs of stakeholders in the rubber industry particularly in the biochemical and physiological aspects. Ultimate focus is to build up a cleaner environment meeting the productivity goals in the present day context. Among the research programs, testing low intensity tapping systems with different methods of stimulation and developing convenient and reliable means of assessing rubber content in latex are in priority.

6. Advisory Services Department

The main objective is the technology transfer to the rubber smallholders in order to improve the adoption rate of recommended technologies to enhance productivity and profitability of the rubber growers.

7. Biometry Section

Providing statistical consultancy to other research departments of RRI, stakeholders and students, maintenance of databases on meteorological factors in the rubber growing areas, while providing data of the agro-meteorological station at Dartonfield to the national system are among the key services of the Biometry section. Development, modification and application of statistical techniques to suit the rubber sector and studies on environmental change are the main research focuses.

8. Adaptive Research Unit

This unit uses both ”Top-down” and “Bottom-up” approaches to refine the technologies available in the large scale plantation sector in favour of smallholders and plan the future research to cater the smallholder requirements, accordingly. In addition, this unit facilitates rubber cultivation in non-traditional areas. Among the research activities of the unit, developing protocols for rubber cultivation in nontraditional areas, assessing livelihood and environmental impacts of rubber cultivation and evaluating rubber based farming systems and other agronomic practices whilst characterizing the socio economic conditions of smallholdings are in top priority.

9. Agriculture Economics Unit

This unit is mainly involved in two major research areas namely, a) Socio-economic studies in the rubber sector in relation to cultivation, processing and marketing and b) Impact evaluation of different policies implemented in the rubber sector.

Technology

The Technology Departments of the Institute carryout research and development work on raw rubber processing and rubber products, with the aim of developing new high value end products and also improving the quality of the products already being manufactured in the country to meet international standards. The departments concerned are situated at Telawala Road, Rathmalana and their functions are as follows.

1. Raw Rubber Process Development and Chemical Engineering

The main function of the department is to carry out research and development on raw rubber processing for the betterment and sustainability of the industry while protecting the environment. The department provides advice on trouble shooting, process development and quality improvement in the raw rubber processing industry. The department is also responsible for assisting the raw rubber industry in human resource development and human safety. Providing technical know–how and all other assistance in the management of waste water generated in raw rubber processing and rubber product manufacturing industries are also major functions of the department.

2. Polymer Chemistry

Major objectives of the department is to carry out Research and Development work on Polymers to optimize the quality and productivity of polymer manufacturing and processing industry. Modification of natural rubber, dry and latex form for improved quality, development of polymers including latex forms to suit the end user applications and identification and selection of additives to optimize process ability of polymer compounds are major Research and Development areas of the department.

3. Rubber Technology and Development Department

Major objective of the department is to carry out Research and Development work on all aspects of Rubber Technology in order to upgrade the rubber based product industries in Sri Lanka to acquire the global standards and thereby making Sri Lankan rubber products competitive in the international markets**.** Rubber compound development, both latex and dry rubber, physical testing of rubber products and compounds, assisting the small and medium scale prospective rubber product entrepreneurs in product development are among the major functions of the department.

4. Raw Rubber and Chemical Analysis Department

The main function of the department is to provide testing and analytical facilities for all forms of dry rubber and rubber latex and issuing of test certificates recognized by all parties concerned in the rubber trade. Research and development work related to chemical analysis and development of test methods related to testing of rubber and latex of all forms is the other major activity of the department.

Service Units

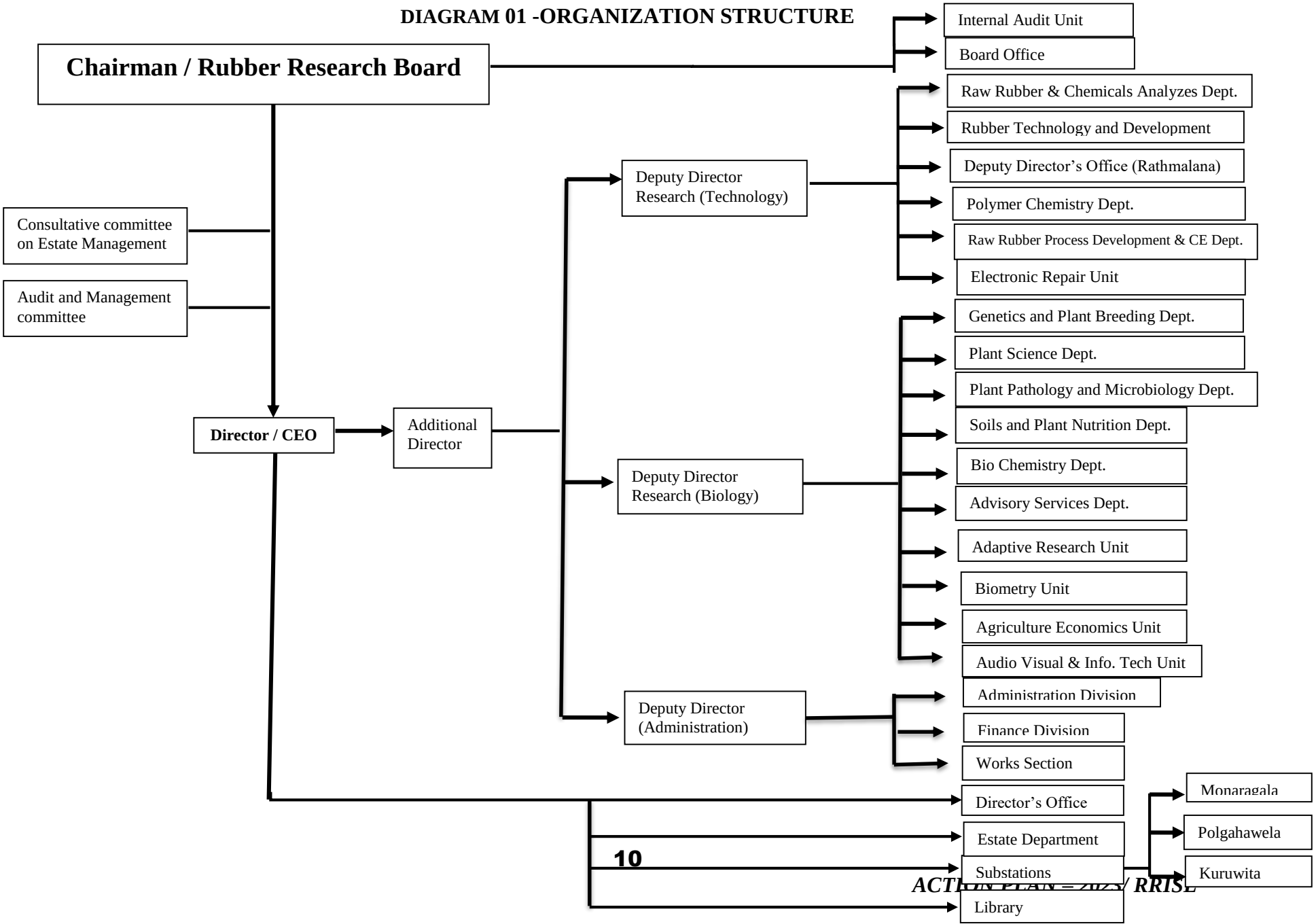
1. Audio Visual & Information Technology Unit

Provides audio visual aids including scientific photography for the research and extension activities. Administration and maintenance of the computer network of the institute including Ratmalana Offices, Technology departments and substations. Updating of the RRI website and supervising maintenance of the institutes' international telephone network and attendance recording machines. This unit also supports the functions of institute accounting software package.

2. Electronic Instruments Repair Unit

Undertakes the repairs of the electronic scientific instruments of the institute. However, currently this units has no staff.

DIAGRAM 01 -ORGANIZATION STRUCTURE



CURRENT RESOURCES AVAILABLE

Infrastructure

The Rubber Research Institute of Sri Lanka (RRISL) has about 2970m^2 of laboratory and office space at its Head Quarters in Agalawatta. Biological research departments and units are located in Agalawatta. In addition, Plant Breeding Department and the Training Center are located in Nivithigalakale substation, Mathugama. Technology Research Departments, Advisory Services Department and the Board Office situated at Rathmalana. Further, about 5313m^2 building space is available at substations located in Monararagla, Kuruwita and Polgahawela.

RRISL also owns approximately 492ha of lands at the Head Office Agalawatta, and its substations Nivithigalakale, Kuruwita, Polgahawela & Monararagla. In particular, Monararagla Substation is devoted to support the expansion process of the rubber cultivation in Monararagla District and in the Eastern Province.

Human Resources

Human resources are considered as the most important asset of any research organization and its qualification based profile is presented tables 1-4. Details of cadre positions are given in table 05. Around 32 scientists are engaged on research activities. Advisory Services Department has 05 Regional Extension offices and currently has only one Regional Officer. Total number of supporting staff for research is (Table 01).

HUMAN RESOURCE PROFILE BY DISCIPLINE ACROSS DIVISIONS
(As at 01st December 2022 with only the highest level of qualifications)

01. Research& Extension Staff (only executive grades)

Discipline	Ph.D.	M.Phil.	M.Sc.	B.Sc.	Without Degree/Diploma	Total
Management	03	00	00	00	00	**03**
Genetics & Plant Breeding	01	00	00	00	00	**01**
Plant Science	01	01	00	01	00	**03**
Plant Pathology & Microbiology	02	00	00	00	00	**02**
Soils & Plant Nutrition	01	01	00	01	00	**03**
Biochemistry & Physiology	01	00	00	01	00	**02**
Polymer Chemistry	01	00	01	01	00	**03**

Raw Rubber and Chemical Analysis	01	01	00	00	00	**02**
Rubber Technology & Development	00	01	00	01	00	**02**
Raw Rubber Process Development & Chemical Engineering	00	00	00	00	00	**00**
Advisory Service	00	00	00	01	00	**01**
Biometry	00	00	00	01	00	**01**
Adaptive Research	01	00	00	01	00	**02**
Agricultural Economics	00	01	00	01	00	**02**
Estate	00	00	00	01	00	**01**
Grand Total	**12**	**05**	**01**	**10**	**00**	**28**

02. Research& Extension Support Staff (including staff grades)

Discipline	M.Phil.	M.Sc.	B.Sc.	Diploma	Without Diploma/ Degree	Total
Genetics & Plant Breeding	01	00	02	01	01	**05**
Plant Science	00	01	06	01	01	**09**
Plant Pathology & Microbiology	00	02	02	01	00	**05**
Soils & Plant Nutrition	01	00	05	02	01	**08**
Biochemistry & Physiology	00	00	03	01	00	**04**
Advisory Service	00	00	09	04	01	**14**
Polymer Chemistry	00	00	04	01	00	**05**
Raw Rubber and Chemical Analysis	00	00	03	00	01	**04**
Rubber Technology & Development	00	01	04	02	00	**07**
Raw Rubber Process Dev. & Chemical Engineering	00	01	02	00	02	**05**
Biometry	00	00	00	01	00	**01**
Adaptive Research	00	00	00	02	00	**02**
Grand Total	**02**	**05**	**40**	**16**	**07**	**70**

03. Administrative Staff – Executives (non research)

Discipline	Degree	ICASL/CIMA/ ACCA/APFA	IRCA	Diploma	Without Dip./ Degree	Total
Administration	01	00	00	00	00	**01**
Accounts	01	00	00	00	00	**01**
Internal Audit	00	00	01	00	00	**01**
Audio Visual Aids Production	01	00	00	00	00	**01**
Works Section	01	00	00	00	00	**01**
Estate	01	00	00	00	00	**01**
Grand Total	**05**	**00**	**01**	**00**	**00**	**06**

04. Administrative Staff – Non Executives (including staff grades)

Discipline	Degree	RMP	Diploma	Without Diploma/ Degree	Total
Scientific Departments	01	00	00	11	**12**
Advisory Service Department	01	00	00	03	**04**
Administration Department	03	00	00	10	**13**
Accounts Section	02	00	00	12	**14**
Internal Audit Unit	00	00	00	01	**01**
Library & Publication	01	00	01	02	**04**
Board Office	00	00	00	02	**02**
Works Section	01	00	04	02	**07**
Estate Department	00	00	00	04	**04**
Instrument Repair Unit	00	00	00	00	**00**
Kuruwita Substation	00	00	00	02	**02**
Polgahawela Substation	00	00	00	01	**01**
Monaragala Substation	00	00	00	04	**04**
Grand Total	**09**	**00**	**05**	**54**	**68**

Annex 1

Cadre Information as at 31.12.2022

Serial No.	Designation	Service	Grade	Salary Code	Salary Scale	Service Level	Approved Cadre			Actual Cadre			Other (Acting/…)
							Permanent	Contract	Casual	Permanent	Contract	Casual	
1	Chairman					Senior Level							
2	Director		HM 2-3	HM 2-3	98215-12x2700-130615	Senior Level	1			0			
3	Additional Director		HM 2-1	HM 2-1	93020-12x2700-125420	Senior Level	1			0			
4	Deputy Director Research		HM 1-3	HM 1-3	86865-15x2270-120915	Senior Level	2			1			
5	Heads of Research Departments		HM 1-3	HM 1-3	86865-15x2270-120915	Senior Level	10			5			
6	Principal Research Officer		HM 1-3	HM 1-3	86865-15x2270-120915	Senior Level	14			2			
7	Principal Advisory Officer		HM 1-3	HM 1-3	86865-15x2270-120915	Senior Level	1			0			
8	Deputy Director (Administration)		HM 1-2	HM 1-2	81670 -15x2270 -115720	Senior Level	1			0			
9	Senior Accountant		HM 1-2	HM 1-2	81670 -15x2270 -115720	Senior Level	1			1			
10	Senior Manager - Estate		HM 1-1	HM 1-1	80295-15X2270-114345	Senior Level	1			1			
11	Senior Research Officer		AR 2	AR 2	76200-10X2000-96200	Senior Level	19			6			
12	Senior Advisory Officer		AR 2	AR 2	76200-10X2000-96200	Senior Level	2			0			
13	Accountant		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			0			
14	Manager - Estate		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			0			

15	Resident Engineer		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			1			
16	Senior Administrative Officer		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			1			
17	Network Administrator		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			1			
18	Internal Auditor		1/II	MM 1-2	54550-10x1375-15x1910-96950	Senior Level	1			1			
19	Research Officer		1/II	AR 1	53150-10X1375-15X1910-95550	Senior Level	26			12			
20	Advisory Officer		1/II	AR 1	53150-10X1375-15X1910-95550	Senior Level	3			1			
21	Registered Medical Practitioner		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
22	Administrative Officer		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	2			1			
23	Assistant Training Officer		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			1			
24	Engineering Assistant		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			1			
25	Librarian & Publication Officer		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			1			
26	Personal Asst. to Chairman		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
27	Personal Asst. to Director		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
28	Accounting & Procurement Officer		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
29	HR Development Officer*		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
30	PRO/Welfare Officer		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
31	Development Officer*		1/II	JM 1-2	43355-10x755-18x1135-71335	Tertiary Level	1			0			
32	Rubber Extension Officer		1/II/III	MA-4	37970-10x755-15x930-5x1135-65145	Tertiary Level	22			13			

33	Audio Visual Aids Producer Officer		1/II/III	MA-4	37970-10x755-15x930-5x1135-65145	Tertiary Level	1			0			
34	Experimental Officer		1/II/III	MA-4	37970-10x755-15x930-5x1135-65145	Tertiary Level	30			21			
35	Translator		1/II/III	MA-4	37970-10x755-15x930-5x1135-65145	Tertiary Level	1			0			
36	Technological Officer (Civil)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			1			
37	Technological Officer (Mechanical)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			1			
38	Technological Officer (Electrical)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
39	Library Asst. & Publication Asst.		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	2			2			
40	Transport Officer		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			1			
41	Management Assistant (Book-keeping)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
42	Management Assistant (Store-keeping)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	2			0			
43	Pharmacist		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
44	Factory Officer		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			

45	Technical Officer (Computer Hardware)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
46	Technical Officer (Audio Visual)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
47	Technical Officer (R & D)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	51			37			
48	Technical Officer (Instrument)		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	2			0			
49	Field Officer		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	12			4			
50	Store Keeper*		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
51	Work Supervisors*		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	7			0			
52	Assistant Factory Officer*		1/II/III	MA 2-2	30310-10X300-7X350-4X600-20X710-52360	Secondary Level	1			0			
53	Management Assistant		1/II/III	MA 1-2	27910-10x300-7x350-12x600-12x710-49080	Secondary Level	69			48			
54	Telephone Operator		1/II/III	MA 1-2	27910-10x300-7x350-12x600-12x710-49080	Secondary Level	2			2			
55	Administrative Assistant *		1/II/III	MA 1-2	27910-10x300-7x350-12x600-12x710-49080	Secondary Level	1			0			
56	Driver		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	30			20			

57	Electrician/Linesman		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	4			3			
58	Carpenter		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	4			2			
59	Mason		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	4			1			
60	Plumber		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	2			3			
61	Artist		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			0			
62	Polisher/Painter		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			0			
63	Mechanic		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			0			
64	Motor Mechanic		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	2			0			
65	General Mechanic		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			1			
66	Ref./Air-conditioning/Electrician		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			1			
67	Tinker/Painter		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			1			
68	Tinker/Welder		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			1			
69	Blacksmith		1/II/III	PL-3	26290-10x270-10x300-10x330-12x350-39490	Primary Level	1			1			
70	Laboratory Attendant		1/II/III	PL 2	25750-10x270-10x300-10x330-12x350-38950	Primary Level	46			36			
71	Guest House Keeper		1/II/III	PL-2	25750-10x270-10x300-10x330-12x350-38950	Primary Level	2			0			
72	Engine Driver		1/II/III	PL -2	25750-10x270-10x300-10x330-12x350-38950	Primary Level	1			1			
73	Junior Assistant Field Officer *		1/II/III	PL 2	25750-10x270-10x300-10x330-12x350-38950	Primary Level	0			2			

74	Office//Club/Library/Stores Attendants		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	26			26			
75	Creche attendant		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	01			01			
75	Vehicle Attendant		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	3			3			
76	Watcher		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	10			09			
77	Labourer		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
78	Dispensary Attendant		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	2			2			
79	General Worker (Generator Oper.)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
80	Gardner		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	2			2			
81	General Worker (Gene./Water Pump)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	3			3			
82	General Worker (Masonry)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
83	General Worker (Motor Vehicles)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
84	General Worker (Painting/Polishing)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
85	General Worker (Plumbing)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
86	General Worker (Water Pump Oper.)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	3			3			
87	Sanitary Attendant		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	2			2			

88	General Worker (Carpentary)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
89	General Worker (Electrical)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
90	General Worker (Cooking)		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	1			1			
91	General Worker		1/II/III	PL 1	24750-10x250-10x270-7x300-15x330-37000	Primary Level	00			21			
	Total						**475**			**321**			

*** No Scream of Recruitment for these posts**

RECRUITMENT SCHEDULE FOR SOME OF THE VACANCIES TO BE FILLED DURING THE YEAR 2023

No.	Designation	Approved cadre	No. of Vacancies Scheduled to be filled	Time of recruitment Scheduled
01	Director	01	01	
02	Principal Research Officer	10	01	
03	Senior Research Officers	16	16	
04	Senior Advisory Officers	02	02	
05	Manager - Estate	01	01	
06	Research Officers	12	10	
07	Accounting & Procurement Officer	01	01	
08	P.A. to Director	01	01	
09	Translator	01	01	
10	Pharmacist	01	01	
11	Management Assistant (Book Keeping)	01	01	
12	Rubber Extension Officer	09	06	
13	Audio Visual Aida Production Officer	01	01	
14	Technical Officer (R & D)	14	09	
15	Technical Officer (Audio Visual)	01	01	
16	Technical Officer (Computer Hardware)	01	01	
18	Technical Officer (Instrumental)	02	02	
19	Technological Officer (Electrical)	01	01	
20	Factory Officer	01	01	
21	Field Officers	08	04	

22	Management Asst. (S.K.)	02	02	
23	Drivers	10	09	
24	Polisher/Painter	01	01	
25	Mechanic	01	01	
26	Motor Mechanic	02	02	
27	Mason	03	03	
28	Carpenter	01	01	
29	Lab. Attendant	09	09	
30	Guest House Keeper	02	02	
	Total	**116**	**92**	

ACHIEVEMENTS DURING LAST FIVE YEARS

Rubber Research Institute of Sri Lanka has a proud record in all fields of rubber research with international recognition. Some achievements made during the last five years for the development of the rubber industry of the country are given below.

2022

- Extension officers (142) from RDD, ASD and Thurusaviya have been given training on Low Intensity Harvesting (LIH) and use of ethephon.
- Smallholders (1834) belonging to 38 RDO divisions and managers, field staff and harvesters (1313) from 58 RPCs were given theoretical and practical awareness to adopt LIH system (S/2 d4).

- Laboratory procedures were established as per ISO 17025 Laboratory accreditation status.
- Participated in the proficiency-testing programme conducted by the Malaysian Rubber Board and showed outstanding performance among 15 international latex testing laboratories.
- Field latex was modified to replace the currently used synthetic polymer based binder employed in the production of paper based on fibres of the "Mana" weed (Figure 1).

Figure 1. Use of a novel natural rubber latex based binder in manufacture of paper out of the fibers of "Mana" weed

- Tyre tread compound was developed using environmental and user-friendly sesame oil as an alternative to petroleum based aromatic processing oil.
- Crepe rubber based fishing bait was developed in collaboration with Samson International PLC at the request of Ministry of Fisheries and Aquatic Resources Development (Figure 2).

Figure 2. Crepe rubber based fishing bait

- Crepe rubber based cellular compound for yoga mat was developed in collaboration with a rubber product manufacturing company.
- Crepe rubber based compound for a toy item for pets was produced at the request of an entrepreneur.
- Novel rubberized-coir based slipper sole was produced at the request of an entrepreneur.

- Low cost, novel shoe sole with different designs was produced using tyre crumbs (GRT) and compounded natural rubber latex at the request of a tyre crumb manufacturing company (Figure 3).

Figure 3. Shoe soles produced with tyre crumbs (GRT) and compounded natural rubber latex

- Reduced graphene oxide (rGO) was synthesized and natural rubber composites containing rGO were produced.
- Natural rubber based dental device was produced at the request of an entrepreneur.
- Natural rubber based compound for a novel machine was developed at the request of an entrepreneur
- Crepe rubber based compound was developed to produce erasers.
- 147 crepe rubber, 517 rubber compound, 29 rubber product and 40 polythene sample tests were conducted and reports were issued at the request of the rubber industry and state universities.
- 32 entrepreneurs / rubber small holders were trained at RRISL, Rathmalana on "Rubber product manufacture" on their request. Also, groups of 14 rubber small holders were trained at RRISL, Rathmalana on “Manufacture of rubber products at cottage level” in collaboration with the Advisory Services Department in connection with the “Livelihood Development Program” (Figure 4).

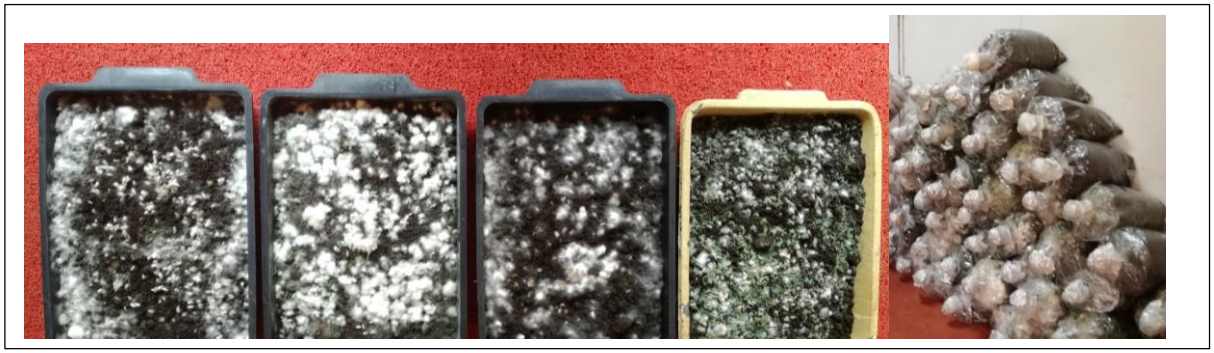
Figure 4. Workshop on “Rubber product manufacture at cottage level” held at RRISL, Rathmalana

- Rubber Technology and Development department in collaboration with the Advisory Services department of RRISL conducted a workshop for 13 female entrepreneurs on manufacture of paper based on fibers of "Mana" weed using the novel binder developed with modified field latex at the request of the Divisional Secretariat, Galigamuwa
- Latex harvesting was commenced in the first established rubber field in the Mullaitivu district of the Northern Province.

- The carbon trading project developed for voluntary carbon market with the 3,000 hectares of new rubber cultivations in Uva and Eastern Provinces was validated by a third-party accredited auditor for Verified Carbon Standards (VCS).
- Awareness programmes were conducted to educate rubber growers on dry zone rubber cultivation in Horowupathana of Anuradhapura district and feasibility studies were conducted for suitability assessments.
- Farmer participatory adaptive research trials were established in Horowupathana, Nochchiyagama and Nuwaragam Palatha Central Divisional Secretariats of Anuradhapura district.
- A training programme was conducted on latex harvesting and sheet rubber processing for rubber farmers in the Northern Province at Vavuniya in collaboration with the Advisory Services Department.
- Development of five interim rubber clones to the rubber growers.

2021

- Registration of two native biopesticides isolated from rubber growing soils against the white root disease



- Rubber compounds suitable to produce brake pads, brake washers and cable guides used in vehicles as well as a rubber component for a biomedical item produced in Sri Lanka were developed at the request of medium scale rubber product manufacturing companies.

Auto mobile components

- Sixty-four on farm participatory research trials were completed for compost application covering 131.8 total acres.
  Districts – Kalutara, Kurunegala, Kandy/Matale, Kegalle, Matara, Galle, Colombo, Ratnapura

  Mature lands – 27 (Acres – 68)
  Immature lands – 37 (Acres 63.8)

Demonstration plots for organic manure application - Kalutara Range


Demonstration plots for organic manure application – Ittapana Range


Demonstration plots for organic manure application – Mathugama

- Introduction and Establishment of pasture in selected land of rubber smallholders in Kalutara district.
  Objective of this study was to improve the livelihood of rubber smallholder sector by introducing an extra income.

  Fourteen farmers were participated for the project covering 12 acres.




Harvesting of pasture in Kalutara district

- Promotion of cinnamon as a boundary crop for the rubber plantations. There have been no marked variations of growth and yield of rubber adjacent to the fence crops.




- Graphene oxide was synthesized successfully using graphite as intermediate material in the synthesis of nanographene, which will be used in manufacture of electronic components.

Graphite

Graphene oxide

- Development of two rubber intercropping models with Guava and Soursop

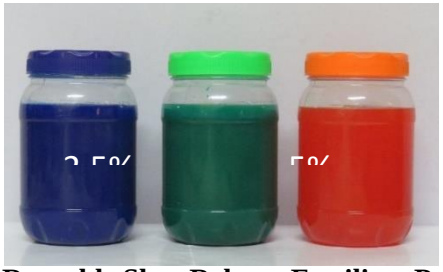
Field establishment of Reusable Fertilizer Porous Tube

- Establishment of environmental friendly, economically viable slow release fertilizer technique to improve crop performance of *Hevea* at 14 estates under Pussellawa, Agalawatta, Kelani Velly and Kegalle Plantations and six small holder sites.

Preparation of Porous tubes for field application

2020

- Two new commercial ethephon formulations i.e. water based and oil based were developed locally.



- Use of the **Reusable Slow Release Fertilizer Porous Tube** (RSPT) has resulted in significantly higher in plant girth (20%), soil exchangeable Mg, leaf nitrogen and magnesium over the conventional fertilizer application.
- Shoes were produced for the export market in collaboration with a medium scale manufacturer by partial replacement of virgin rubber in out-sole compounds with patented novel reclaimed rubber developed using an environmental friendly reclaiming agent with the aim of reducing the cost of shoes.
- NR based composites with synthesized micro and nano fibers of coir were developed with the aim of replacing carcinogenic carbon black and enhancement of properties.
- Initial development of NR latex based fashionable gloves to protect against the Covid-19 pandemic.

- NR latex compound as a waterproof coating material for tents made out of fabric was developed on a request made by a client as a need during Covid-19 pandemic.
- NR based composites with durian husk fibres as a partial replacement for carbon black, which has been identified as a carcinogenic ingredient, were developed and shoe soles were produced in collaboration with the Textile Department, Open University of Sri Lanka.

2019

- Natural rubber latex foam was produced successfully using creamed latex for the benefit of Small and Medium Enterprises.
- Natural rubber latex based nontoxic adhesive was developed using a plant based preservative and tackifying agent at the request of a toy company and the formulation was transferred to the company.
- Natural rubber based formulation suitable to produce protective caps for bicycles were developed.
- A non – toxic, transparent natural rubber based compound for teats and teething rings was developed for a toy company.
- Natural rubber/Ethylene – Propylene – Diene Monomer blend compound suitable for an automobile application was developed.
- Novel nitrosamine free preservative system was developed for natural rubber latex.
- Coir pith and elephant dung were found to be better sowing media than river sand for germination of rubber seeds.
- Polybags of reduced sizes (from 15” x 6” to 15” x 4”) were found effective for raising budded rubber plants.

- Antioxidant treatments were found to be effective in arresting tapping panel dryness of rubber trees.
- A new microbial based medium was introduced for rapid skeletanization of rubber leaves.
- Application frequency of mammalian pest repellant was identified as six months for the Intermediate zone.
- Once in four days harvesting system was introduced successfully, to rubber smallholder sector.
- Raw Rubber and Chemical Analysis Department was renovated according to international quality standards in view of achieving ISO 17025 Laboratory Accreditation, which is an urgent requirement for the rubber industry in Sri Lanka.
- Mobile apps for technological solutions in the rubber industry was introduced.

2018

- Single application of newly developed fertilizer encapsulated coir bricks (ECB) was found to be sufficient achieving required growth rate in immature rubber plants under field conditions.
- Reusable porous fertilizer tube was developed for immature rubber plants, with maximize fertilizer use efficiency and minimize wastage.
- "Saka Sara" liquid organic fertilizer was developed by using freely available organic materials, green manure, farm yard manure, crop residues, locally available Eppawala Rock Phosphate (ERP) and Dolomite.
- Two soil maps relevant to rubber growing areas in Kalutara and Ratnapura districts were developed and ten different soil series were identified.

- Use of polythene and shade net as alternative weed management practices showed no weed regeneration around the base of immature plants up to 18 months.
- A protocol for local production of ethephon stimulant was developed.
- Natural rubber composites were developed with surface treated fibres of the pineapple crown as well as Arricanut husk with the aim of developing green rubber composites. NR based composites were prepared using plant based non-modified and modified Moringaoleifera crude.

- Presidential merit award in the "Chemistry" category was received for the patented mechano-chemical reclaiming process (Oreclaim) for ground rubber tyre developed using a natural product.
- A mechano-chemical reclaiming process was developed for NR based carpet waste on the request of a large scale rubber product manufacturer and the technology was transferred to the company.
- A non-conductive NBR based compound was developed for grommet used in assembling of electric cables, SBR based compound for condenser end mount and wiring bunch bush and EPDM based compound for suction end mount on requests made by a private company engaged in assembling electrical components. Technology were transferred to the comp.

BUDGET ESTIMATES- 2023

Head No. 410-02-03-1-1503 / 1509

Recurrent Expenditure – 2023

Object Code	Category/Object Title	Sche. No.	Revised Budget 2022 Rs.000's	Exp up to 30.11.2022	Budget 2023 Rs.000's
	Recurrent Expenditure				
	Personal Emoluments		**350,000**	**297,999**	**387,000**
1001	Salaries & wages	**1**	223,412	201,269	212,784
1002	Overtime & Holiday Payments		12,000	9,095	19,454
1003	Other Allowances	**2**	114,588	87,634	154,762
	Travelling Expenses		**7,200**	**7,002**	**14,000**
1101	Domestic		7,200	7,002	8,000
1102	Foreign		-		6,000
	Supplies		**19,025**	**17,307**	**21,200**
1201	Stationary & Office Requisites		4,500	3,766	5,000
1202	Fuel		12,700	12,023	13,000
1205	Other	**3**	1,825	1,518	3,200

BUDGET ESTIMATES- 2023
Head No. 410-02-03-1-1503 / 1509
Recurrent Expenditure – 2023

Object Code	Category/Object Title	Sche. No.	Revised Budget 2022 Rs.000's	Exp up to 30.11.2022	Budget 2023 Rs.000's
	Maintenance Expenditure.		**9,224**	**8,929**	**17,000**
1301	Vehicles		3,474	3,337	7,000
1302	Plant, Machinery & Equipment		2,250	2,243	5,000
1303	Building & Structures - Repairs & Maintenance		3,500	3,349	5,000
	Services		**47,111**	**37,527**	**55,350**
1401	Transport/Hiring Vehicles		160	130	200
1402	Postal and Communication		2,808	2,730	4,000
1403	Electricity and Water		6,500	6,006	7,000
1404	Rents and Local Taxes		1,030	1,025	400
1405	Other	**4**	36,613	27,636	43,750
	Total Recurrent Expenditure		**432,560**	**368,764**	**494,550**

RUBBER RESEARCH INSTITUTE OF SRI LANKA

BUDGET ESTIMATE

Recurrent Expenditure (Detailed) – 2023

Object Code	Category/Object Title	Sche. No.	Revised Budget 2022 Rs.000's	Exp. up to 30.11.2022	Budget 2023 Rs.000's
1001	**Salaries & Wages**	**1**	**223,412**	**201,269**	**212,784**
	Salaries & Wages		189,220	170,017	179,766
	EPF Contribution		28,497	26,047	27,488
	ETF Contribution		5,696	5,206	5,530
1002	**Overtime & Holiday Payments**		**12,000**	**9,095**	**19,454**
	Overtime & Holiday Payments		12,000	9,095	19,454
1003	**Other Allowances**	**2**	**114,588**	**87,634**	**154,762**
	Cost of Living		31,964	29,172	31,730
	Rent and other Allowance		1,140	919	1,200
	Gratuity Payments		3,750	1,118	33,752
	Medical Benefits		40,562	36,177	44,432
	Research Allowances		15,736	2,828	21,136
	Professional allowance		3,200	2,983	3,240
1401	Transport		12,554	11,508	6,600
1202	Fuel Allowances				7,586
1402	Telephone Allowance		5,682	2,929	5,085
1205	**Other Supplies**	**3**	**1,825**	**1,518**	**3,200**
	Medical Expenditures		635	537	600

BUDGET ESTIMATE

Recurrent Expenditure (Detailed) – 2023

Object Code	Category/Object Title	Sche. No.	Revised Budget 2022 Rs.000's	Exp. up to 30.11.2022	Budget 2023 Rs.000's
	Other Consumables		440	234	2,000
	L.P. Gas Expenditures		750	747	600
1405	**Other Services**	**4**	**36,613**	**27,636**	**43,750**
	Printing Charges/ Publications		170	142	500
	Insurance Expenditures		1,500	1,385	1,500
	Polgahawela Sub Station Maintenance		190	120	500
	Monararagla Sub Station Maintenance		345	290	500
	Field Expenditures		1,300	789	2,000
	IRRDB Contribution /Exp		4,800	1,001	2,500
	Administrative & General Charges		4,058	3,665	6,000
	Welfare Expenditures		250	244	250
	Contractual services for Research Support		24,000	20,000	30,000
	Revenue	**5**	**32,560**	**21,314**	**52,550**
	Other Income		27,560	18,814	41,550
	Revenue - DF Estate		5,000	2,500	11,000

BUDGET ESTIMATE

Capital Expenditure – 2023

Object Code	Category/Object Title	Sche: No.	Revised Budget 2022	Exp. up to 30.11.22	Budget 2023
	CAPITAL EXPENDITURE				
	Rehabilitation and Improvement of Capital Assets		**1,500**	**1,438**	**4,000**
2001	Buildings - Rehabilitation				
2002	Plant, Machinery and Equipment				-
2005	Maintenance of Buildings		1,500	1,438	4,000
	Acquisition of Capital Assets		**2,500**	**495**	**-**
2102	Furniture and Office Equipment				
2106	Other- Laboratory Equipment's		2,500	495	-
	Library Books				
	Development Capital		**7,500**	**5,185**	**7,500**
2105	Lands and Land Improvements- Research & Dev.		500	24	500
	Monaragla Substation Nursery		4,800	4,691	4,800
	Establishment of Adaptive Research Trials (Polgahawela)		200	73	200
	Establishment of Research Trials (North East)		500		500
	Human Capital Development Programme		1,500	397	1,500
	Research Projects		**18,500**	**15,166**	**18,500**
	Research and Development		18,500	15,166	18,500
	Total Capital Expenditure - CF		**30,000**	**22,284**	**30,000**

BUDGET ESTIMATE
Capital Expenditure – 2023

Object Code	Category/Object Title	Sche: No.	Revised Budget 2022	Exp. up to 30.11.22	Budget 2023
	Special Capital Projects MPI - On Going		**36,000**	**11,750**	**66,310**
	Screening of drought/stress tolerant Hevea Clones for sustainable rubber cultivation in marginal areas		3,240	1,590	14,500
	Establishment of accredited laboratory and enhancement of testing facilities for rubber industry in Sri Lanka		10,460	210	-
	Establishment of environmental friendly, economically viable slow release fertilizer technique		7,660	3,010	27,290
	Monitoring and optimizing the performance of rubber effluent treatment plants to improve the treatment efficiency and ensure the work place safety.		5,640	2,070	10,780
	Studies on the biology and epidemiology of the Pestalotiopsis Leaf fall disease and to develop effective management strategies		8,000	4,840	13,740
	Establishing a group of small-scale rubber product manufacturing entrepreneurs		1,000	30	-
	Total Capital Expenditure		**66,000**	**34,034**	**96,310**

BUDGET ESTIMATE
Capital Expenditure – 2023

Object Code	Category/Object Title	Sche.No.	Total Rs. 000's
	Expenditure		
	Personal Emoluments		387,000
	Recurrent Expenditure		107,550
	Capital Expenditure - CF		30,000
	Capital Expenditure - SMTR		66,310
	Total		**590,860**
	Financed by		
	Own Revenue - from RRI		41,550
	Own Revenue - from DF		11,000
	Treasury Grant – Personal Emoluments (1503)		387,000
	Treasury Grant – Other Recurrent (1509)		55,000
	Treasury Grant - Capital (2201)		30,000
	Treasury Grant - Capital (2201) SMTR		66,310
	Total		**590,860**

CASH FORECAST FOR SPECIAL CAPITAL DEVELOPMENT PROJECTS

Annex 4

Project Name: **Establishment of environmental friendly, economically viable slow release fertilizer technique to improve crop performance and establishment of accredited laboratory to supply good service to the rubber industry**

CF MPI

Month (2023)		Jan.	Feb.	Mar.	Apr.	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Total
Financial Requirement (Rs.Mn)	Recurrent													
	Capital	0.51	1.5	2.51	2.0	1.5	3.37	2.64	2.64	2.64	2.66	2.66	2.66	**27.29**

Project Name: **Screening of drought /stress tolerant *Hevea* clones for sustainable Rubber cultivation in marginal areas**

CF MPI

Month (2023)		Jan.	Feb.	Mar.	Apr.	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Total
Financial Requirement (Rs.Mn)	Recurrent													
	Capital	0.5	1.5	1.5	2.5	3.5	3.0	0.5	0.5	1.0	-	-	-	**14.50**

Project Name: **Monitoring and optimizing the performance of rubber effluent treatment plants in Sri Lanka to improve the treatment efficiency and ensure**

CF MPI

Month (2023)		Jan.	Feb.	Mar.	Apr.	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Total
Financial Requirement (Rs.Mn)	Recurrent													
	Capital	0.98	1.0	1.5	0.55	0.55	0.55	1.0	1.5	2.6	0.15	0.15	0.25	**10.78**

Project Name: **Studies on the biology and epidemiology of the Pestalotiopsis Leaf fall disease and to develop effective management strategies**

CF MPI

Month (2023)		Jan.	Feb.	Mar.	Apr.	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Total
Financial Requirement (Rs. Mn.)	Recurrent													
	Capital	0.5	1.0	0.64	1.0	1.5	2.4	1.0	1.5	2.1	0.7	0.7	0.7	**13.74**

ACTION PLAN 2023
RUBBER RESEARCH INSTITUTE OF SRI LANKA

Thrust Area

Recommendations on technologies and technology transfer to enhance productivity and profitability of rubber cultivation and rubber product manufacturing through research and development activities

Major research & development tasks for 2023

1. Establishment of tyre testing center and provide testing facilities for different forms of raw rubber and rubber products to promote the product development sector.
2. Improvement in land productivity of rubber through the knowledge enhancement and skill development in the plantation sector.
3. Promotion of SMEs and rubber small holders in rubber product manufacture with knowledge inputs and by assisting in troubleshooting.
4. Development of area/ site-specific environmental friendly, economically viable slow release fertilizer recommendation to maximize the efficiency of fertilizer usage.
5. Carrying out research to facilitate rubber associated product development for value addition.
6. Provide testing facilities for different forms of raw rubber and rubber products to promote the process and product development sectors, respectively.
7. Testing new methodologies to control pests & diseases and weeds in rubber lands
8. Promotion of rubber sector to a cleaner industry.
9. Enhance the vigilance on new pest and disease threats to rubber cultivation.
10. Feasibility studies in developing eco-tourism in rubber plantations
11. Issuance of 125,000 carbon credits to the voluntary carbon market by the project developed with 3,000 hectares of new rubber cultivations in Uva and Eastern Provinces.
12. Obtain the accreditation standards for the organizational carbon footprint of the Rubber Research Institute of Sri Lanka.
13. Development of three nano composites with natural rubber and reduced graphene oxide nano sheets for special applications.
14. Development of environmental friendly two rubber composites with green materials.
15. Analysis of climate change and variability indicators to study climate parameters in Rubber growing areas
16. Development of a novel cross-linking system for peroxide vulcanization of natural rubber
17. Development of new clones with high yields, vigour, and drought and disease tolerance/resistance through accelerate the breeding procedures.
18. Introduction low intensity harvesting systems for rubber growers.
19. Identification of effect of new leaf disease on latex diagnosis and yield determinant factors
20. Provide guidelines to improve the livelihoods of rubber holdings and formulation of effective policy measures
21. Ensure the issuing of the quality of rubber plants produced from government and RPCs for rubber growers
22. Introduction of an improved irrigation system and bud-grafting technique.
23. Identification of five heavy metal ions in NR latex in different climatic areas and evaluation of their effect on latex maturity and compound stability.

Allocation of funds for the January to December 2023 (Rs. Million)

Source of fund	Capital	Recurrent	Total
Consolidated fund	**30.00**	**442.00**	**472.00**
Consolidated fund – Thro SMTR	**66.31**	**-**	**66.31**
Generated fund	**-**	**52.55**	**52.55**
Grand Total	**96.31**	**494.55**	**590.86**

Procurement Plan for year 2023

Annex 5i

Dept./Line Agency/ Ministry	Procurement Category (Goods, Works & Services etc.)	Estimated Cost Rs.(Mn)	Source of finance name of Donor	Procurement method (CB, LIB, LNB, NCB and National shopping etc.)	Level of Authority	Priority status U- Urgent P- Priority N- Normal	Current Status procurement preparedness activities	Schedule Date of Commencement	Schedule date of completion	Financial Targets (Rs. Mn)				Remarks
	GOODS									**Q1**	**Q2**	**Q3**	**Q4**	
	Furniture and Office Equipment			National Competitive Bidding (NCB) / Restricted National Competitive Bidding (LNB) / Shopping as applicable in accordance with procurement guidelines for goods/ works and services			Awaiting Necessary Approvals							
	Plant, Machinery & Equipment													
	Other Laboratory Equipment													
	Library Books													
	WORKS													
	Building Rehabilitation & Improvements Building													
	Structures-Repairing of Internal Roads													
	Maintenance of Buildings	4.00	CF		DPC (Minor)	P		01.01.2023	30.06.2023		2.00	2.00		
	Research Projects													
	Research and Development	18.50	CF		DPC (Minor)	P		01.01.2023	31.12.2023	4.63	4.63	4.63	4.63	
	New Research projects	-												
	SERVICES													
	Lands and Land Improvements-R&D	0.50	CF		DPC (Minor)	P		01.01.2023	31.12.2023	0.13	0.13	0.13	0.13	
	Monaragala Substation Nursery	4.80	CF		DPC (Minor)	P		01.01.2023	31.12.2023	1.20	1.20	1.20	1.20	
	Establishment of Adaptive Research Trails, Polgahawela	0.20	CF		DPC (Minor)	P		01.01.2023	31.12.2023	0.05	0.05	0.05	0.05	

	Establishment of Research (Eastern and Northern) Provinces	0.50	CF		DPC (Minor)	P		01.01.2023	31.12.2023	0.13	0.13	0.13	0.13	
	Human Capital Development Project (Foreign/Local)	1.50	CF		DPC (Minor)	P		01.01.2023	31.12.2023	0.38	0.38	0.38	0.38	
	Sub Total	**30.00**						**-**	**-**	**6.50**	**8.50**	**8.50**	**6.50**	
	Special Capital Projects- MPI													
	Screening of drought/stress tolerant Hevea Clones for sustainable rubber cultivation in marginal areas	14.50	CF		DPC (Minor)	P		01.01.2023	31.12.2023	1.45	2.90	4.35	5.80	
	Establishment of environmental friendly, economically viable slow release fertilizer technique	27.29	CF		DPC (Minor)	P		01.01.2023	31.12.2023	2.73	5.46	8.19	10.92	
	Monitoring and optimizing the performance of rubber effluent treatment plants to improve the treatment efficiency and ensure the work place safety.	10.78	CF		DPC (Minor)	P		01.01.2023	31.12.2023	1.08	2.16	3.23	4.31	
	Studies on the biology and epidemiology of the Pestalotiopsis Leaf fall disease and to develop effective management strategies	13.74	CF		DPC (Minor)	P		01.01.2023	31.12.2023	1.37	2.75	4.12	5.50	
	Sub Total	**66.31**								**6.63**	**13.26**	**19.89**	**26.52**	
	Total	**96.31**								**13.13**	**21.76**	**28.39**	**33.02**	

Annex 3

Action Plan for Revenue Collection

Rs. Mn.

Dept.	Programme	Activities	Key Performance Indicators	Targets								Output/Outcome		Total Income	Responsible Officer
				Q1		Q2		Q3		Q4		Total			
				P	F	P	F	P	F	P	F	P	F		
RT & D	Technical assistance on manufacture of value added products	Testing of raw rubber, rubber compounds and products at the request of the industry	Number of samples tested	175	0.30	200	0.40	200	0.40	200	0.40	775	1.50	3.65	H/ RT & D
		Training entrepreneurs / rubber small holders on "Rubber Product Manufacture"	No. of services provided	50	0.10	50	0.10	50	0.10	50	0.10	200	0.40		
	Manufacture of rubber products for local and foreign markets	Development of latex /dry rubber based new / novel rubber compounds / products at the request of the local rubber products manufacturing industry including consultancy charges	No of products	3	0.40	3	0.45	3	0.45	3	0.45	12	1.75		
PC	Client requested Programmes	Providing Testing Services	Number of samples tested	250	0.50	500	0.65	500	1.00	500	0.87	1,750	3.02	5.17	H/ PC
		Training programs and workshops	No. of Training prog. and workshops	1	0.50	1	0.50	1	0.50	1	0.65	3	2.15		
RR & CA	Client requested Programmes	Providing Testing Services	Number of samples tested	150	0.55	250	1.15	250	1.00	250	0.55	900	0.75	4.00	H/RR&CA

Rs. Mn.

RR&CA		Sampling , inspection services and troubleshooting activities	Number of inspections	1	0.01	1	0.01	1	0.01	1	0.01	4	0.04	0.56	
		Training programs and workshops	No. of Training prog. and workshops	1	0.13	1	0.13	1	0.13	1	0.13	4	0.52		
Tyre Centre	Client requested Programmes	Providing Testing Services (ICP OES)	Number of samples tested	150	0.45	200	0.60	200	0.60	200	0.60	750	2.25	2.51	DDRT
		Training programs and workshops	No. of Training prog. and workshops	1	0.03	1	0.08	1	0.08	1	0.08	4	0.26		
BC	Technical assistance on adoption of low intensity harvesting systems	Theoretical and practical awareness	No of Programes	2		2		2		2		8	-	0.72	H/BC
		Trouble shooting on LIH and use of yield stimulant	No of activities	5		5		5		5		20	-		
	Productivity improvement	Development of site specific stimulation protocols for abandoned rubber lands	No of activities	2		2		2		2		8	-		
	Ethephon sample testing	Investigate ET%	Number of samples tested	5	0.09	5	0.09	5	0.09	5	0.09	20	0.36		

Action Plan for Revenue Collection **Rs. Mn.**

ARU	Climate Change Mitigation	Conducting workshop on dev. carbon trading projects for voluntary carbon markets	No of workshops	1	0.10	-	-	1	0.10	-	-	2	0.20	0.80	PRO/ARU
		Conducting workshop on organizational carbon footprint calculation	No of workshops			1	0.10			1	0.10	2	0.20		
		Consultancy on carbon footprint calculation	Number of reports issued			1	0.20			1	0.20	2	0.40		
BM & Econ	Training	Conducting workshop on Microsoft Excel for RPCs	No of Training Prog.	1	0.10			1	0.10			2	0.20	0.80	PRO/BM
		Conducting workshop on basic statistical methods (20 No.)	No of workshops			1	0.15			1	0.15	2	0.30		
		Conducting workshop on building basic skills on GIS (20 No.)	No of workshops			1	0.15			1	0.15	2	0.30		
PP& MB	Testings	Quarantine testing	Number of reports issued	5	0.05	10	0.05	10	0.05	10	0.05	35	0.20	0.38	H /PP&MB
		Microbiological testing	Number of reports issued	10	0.03	10	0.05	10	0.05	10	0.05	40	0.18		
S&PN	Soil and Foliar Survey Programme	Provide site specific fertilizer recommendation for mature rubber	Number of samples tested	5%		10%	1.00	40%	1.00	45%	1.00	100%	3.00	4.40	H/S&PN
	Land suitability evaluation programme	Select suitable land for rubber cultivation in traditional as well as non-traditional areas	Number of reports issued	25%	0.15	25%	0.15	25%	0.15	25%	0.15	100%	0.60		
	Analytical services	Provide analytical reports to stakeholders on fertilizer, soil. Water and plant samples	Number of reports issued	25%	0.20	25%	0.20	25%	0.20	25%	0.20	100%	0.80		

Rs. Mn.

Action Plan for Revenue Collection

G&PB	Training and workshop on molecular strategies	Conduct workshops or training	No. of trainings/ workshops	-	-	4	0.1	4	0.1	6	0.3	14	0.50	0.50	H/G&PB
PS	Rubber nursery service	Issuing bud wood plants	No. of plants	-	-	600	0.15			600	0.15	1200	0.30	0.50	H/PS
		Issuing bud woods	No. Of bud wood meters	80	0.05	80	0.05	80	0.05	80	0.05	320	0.20		
RRPD&CE	Client requested Programmes	Testing Charges	Number of reports issued	150	0.20	250	0.50	250	0.52	250	0.50	900	1.72	1.92	H/RRPD& CE
		Training programs and workshops	No of workshops	1	0.05	1	0.05	1	0.05	1	0.05	4	0.20		
ASD	In service training for Rubber Dev. officers - RDD	Practical workshops on rubber farming (5 days)	No of workshops	1	0.20	1	0.20	1	0.20	1	0.20	4	0.80	2.00	H/ASD
	Productivity improvement - RPCs	Field staff of RPCs	No of workshops	1	0.20	1	0.20	1	0.20	1	0.20	4	0.80		H/ASD
	Productivity improvement of RI	Field staff of rubber manufacturing sector	No of workshops	1	0.08	1	0.08	1	0.08	1	0.08	4	0.30		H/ASD
	Out sourcing of TC	RRISL/TRI/Universities/	No of workshops	1	0.03	1	0.03	1	0.03	1	0.03	4	0.10		H/ASD
Monaragala	Monaragala Sub Station	Sale of Rubber	No of MT	3000 kg	1.75	3000 kg	1.75	3000 kg	1.75	3000 kg	1.75	12000	7.00	7.00	DDRB
Accounts	Other Income	Tender Fees, Loan Interest and Others	No of Activities	25%	0.75	25%	0.75	25%	0.75	25%	0.75	100%	3.00	3.00	SA
Admin	Other Income	Solar, Guest House, Sale of Publication etc.	No of Activities	25%	1.00	25%	1.00	25%	1.00	25%	1.00	100%	4.00	4.00	DDA/SAO
		Sale of Rubber -Estate	No of MT	25%	2.75	25%	2.75	25%	2.75	25%	2.75	100%	11.00	11.00	SME
	Total				**10.38**		**13.85**		**13.47**		**13.85**		**52.55**	**52.55**	-

DISTRIBUTION AMONG THE DIFFERENT DIVISSIONS – January/ December 2023 **Rs. Mn**

Programme & Project 1. Name 2. Duration 3. TEC & Source of Funds	Activity	R&D Estimate (Rs. Mn) 2023	Source of funds DF&GF		R&D Targets (Rs. Mn) Jan - Dec	Output	Responsible Officer Name Designation
Plant Science Dept.	Research & Development Activities and providing services on all aspects of Natural Rubber	2.71	CF&GF	**FT**	2.71	One improved grafting technique introduced, One improved irrigation technique identified (50% progress in 2022), One spatial arrangement identified, Certified rubber plants produced from Government, RPCs and private nurseries, Two intercropping models identified (50%), One improved tapping technique and rain guard type tested, All requested training programs and troubleshooting attended	Mr. T. U. K. Silva, SRO
Plant Pathology Dept.		1.99	CF&GF	**FT**	1.99	Recommendation of Corynespora resistant Hevea clones - 25 Identification of effective pesticides to control diseases - 01, new reports 01, publications 02, Identification of new beneficial microbes Microboal applications, Trained stakeholders	Dr. (Mrs). S. Fernando, Head
Genetics & Plant Breeding Dept.		1.99	CF&GF	**FT**	1.99	Developed 2500 HPs progenies and evaluate two HP progenies, Establish 10 clones in clone museum, Exchanged 5 foreign clones and two selected for commerciality, Three genotype selected for interim recommendation, One genotype identified for smallholder, Molecular characterized 02 genotypes for accelerate the breeding programme	Dr.(Mrs)S. P. Withanage, Head
Soils & Plant Nutrition Dept.		1.49	CF&GF	**FT**	1.49	Introduction of environmental friendly product, Effective weed control method, fertilizer recommendation for nontraditional areas, Three bio efficacy report issued, Introduction of a effective fertilizer management system, Mapping soil spatial variability of selected rubber plantations, Quantification of the variability of Silicon and micro nutrients, Determination of Sulphur status in Agalawatta soil series, Survey 5000 ha of rubber lands and provide 40 - 50 site specific fertilizer recommendation reports, Survey 500 ha of land for planting rubber Provide 3 - 5 land suitability reports, Assess 4000 parameters and provide 120 analytical reports and	Dr.(Mrs). Rasika Hettiarachchi Head
Biochemistry Dept.		0.94	CF&GF	**FT**	0.94	20% development of weekly harvesting system, 20% development of d4 double cut system, 25 sites, 10 genotypes tested, 10 genotypes tested, 10 sites, 10% development, 3 sites, 2 formulations	Dr. (Mrs) S. Kudaligama, Head

Programme & Project 1. Name 2. Duration 3. TEC & Source of Funds	Activity	R&D Estimate (Rs. Mn) 2023	Source of funds DF&GF		R&D (Rs. Mn) Jan – Dec	Output	Responsible Officer Name Designation
ASD & Training Centre	Research & Development Activities and providing services on all aspects of Natural Rubber	0.46	CF&GF	**FT**	0.46	• Technology transfer to 240 holdings, 03 villages and 35 estates • Established 30 processing centers, 4 model estates and 4 demonstration plots, • Trained 250 rubber farmers, 500 estate managers, estate field staff and workers, 200 new harvesters, 25 village youth and 50 estate youth, • Established 02 Technology transfer centers and One Techno-Park	Mr. Sanjeewa Gunarathne, AO
R.R. & C.A. Dept.		1.66	CF&GF	**FT**	1.66	Quality control of raw rubber, Introduce new chemical to reduce yellowish colour in crepe rubber, Introduce new clones with good raw rubber properties, Recommendation based on raw rubber properties	Mrs. A.P. Attanayake SRO
R.R.P.D& C.E. Dept.		1.50	CF&GF	**FT**	1.50	Novel chemical and processes for manufacture of deprotenised natural rubber, novel chemical and process for manufacture of deprotenised rubber, a process for development of advanced foam rubber, Semi-mechanized raw rubber manufacturing process, single day crepe rubber dying system, Cost effective effluent treatment technologies, Advanced mobile app for raw rubber processing, appropriate technologies for clients	Dr. S. Siriwardane, DDR (T)
RT & D		2.48	CF&GF	**FT**	2.48	225 entrepreneurs / industries benefited, 5 new rubber composites	Dr (Mrs).D.G. Edirisinghe, Head
Polymer Chemistry Dept.		1.99	CF&GF	**FT**	1.99	Value added natural rubber grade, Value added natural rubber composites, Client assistant programs, and testing services	Mr. Y. R. Somarathne, RO

DISTRIBUTION AMONG THE DIFFERENT DIVISSIONS – January/ December 2023 **Rs. Mn**

Programme & Project 1. Name 2. Duration 3. TEC & Source of Funds	Activity	R&D Estimate (Rs. Mn) 2023	Source of funds DF&GF		R&D (Rs. Mn) Jan – Dec	Output	Responsible Officer Name Designation
Adaptive Research Unit	Research & Development Activities and providing services on all aspects of Natural Rubber	0.61	CF&GF	**FT**	0.61	Protocols for rubber cultivation in dry zone developed, Impact of rubber cultivation on livelihood in nontraditional areas quantified, Two new areas feasible for rubber cultivation identified, Area specific farming models established, Smallholder on-farm productivity and variability in Kegalle and Kurunegala districts identified, Psycosocioeconomic status of plantation workforce identified	Dr. (Mrs). E. S, Munasinghe, PRO
Biometry Section		0.36	CF&GF	**FT**	0.36	Research support for 30 projects identified for 2021 Action Plan, 02 developments/modifications/applications and subsequent publications	Dr. W. Wijesuriya, PRO
Agriculture Economic		0.32	CF&GF	**FT**	0.32	Change in rubber growth identified, District base poverty indicators developed, Sustainability measures identified, Rubber-farm livelihood types, New Policy guidelines formulated, Awareness reports for the general public, Rubber yield map. Rubber farm household resilience measures.	Mr. J. K. S. Sankalpa SRO
Funds		**18.50**			**18.50**		
Other Capital		**11.50**			**11.50**		
Total Funds		**30.00**			**30.00**		

RUBBER RESEARCH INSTITUTE OF SRI LANKA
For the Year 2023 - Divisional Capital / Recurrent Budget

Departments	Divisional Capital																Recurrent
	Building Rehabilitation	Plant, Machinery & Equipment	Maintenance of Buildings	Furniture & Office Equipment	Other- Laboratory Equipment's	Library Books	Land & Land Improvements - R& D	Monaragala	Polgahawela	Vehicles / Maintenance of vehicle	North East	New leaf disease	PHD	HRD Programme	R & D	Total	
Board Office			4.00													4.00	3.88
Director Office																-	0.21
DDR (T)																-	0.19
Administration - RT																-	6.01
Administration -DF														1.50		1.50	40.39
Accounts & Procurement																-	2.31
Stores																-	1.04
Work Section																-	24.18
Internal Audit Unit																-	0.16
Audio Visual & IT Units																-	0.56
Library DF																-	1.50
Library RT																-	0.02
Estate																-	
Monaragala Substation								4.80								4.80	1.23
Polgahawela Substation									0.20							0.20	

Departments	Divisional Capital																Recurrent
	Building Rehabilitation	Plant, Machinery & Equipment	Maintenance of Buildings	Furniture & Office Equipment	Other- Laboratory Equipment's	Library Books	Land & Land Improvements - R& D	Monaragala	Polgahwela	Vehicles / Maintenance of vehicle	North East	New leaf disease	PHD	HRD Programme	R & D	Total	
DDR (B)							0.50				0.50					1.00	0.19
Training Centre - N'kele																-	0.39
Adaptive Research Unit															0.61	0.61	0.90
Adv. Service															0.46	0.46	3.01
Agriculture & Eco. Unit															0.32	0.32	0.07
Bio- Chemistry															0.94	0.94	1.74
Bio Metry															0.36	0.36	0.76
Genetics & PB															1.99	1.99	4.04
Plant Pathology															1.99	1.99	2.60
Plant Science															2.71	2.71	2.97
Polymer Chemistry															1.99	1.99	2.08
RR & CA															1.66	1.66	1.81
RR & CE															1.50	1.50	1.28
Rubber Technology															2.48	2.48	1.24
Soils & Plant Nutrition															1.49	1.49	2.80
Total	-	-	4.00	-	-	-	0.50	4.80	0.20	-	0.50	-	-		18.50	30.00	107.55

RUBBER RESEARCH INSTITUTE OF SRI LANKA

DISTRIBUTIONAMONG THE DIFFERENT DIVISSIONS – January/ December 2022 (Recurrent)

Programmed & Project 1. Name 2. Duration 3. TEC & Source of Funds	Allocation for 2023			Activity based budget			Source of funds	Financial Quarterly Targets				Responsible Officer's Name Designation
	CF	GF	Total (Rs. Mn)	Emoluments (Rs.mn)	Other (Rs. Mn)	Total	CF&GF	Q1	Q2	Q3	Q4	
Board Office	16.43		16.43	14.39	2.65	17.04	CF&GF	4.26	4.26	4.26	4.26	Mr.D.M.S.Dissanayake, SAO
Director Office	20.14		20.14	17.64	0.21	17.84	CF&GF	4.46	4.46	4.46	4.46	Dr. S. Siriwardane, Actg. Dir.
DDR (T)	5.25		5.25	4.60	0.19	4.79	CF&GF	1.20	1.20	1.20	1.20	Dr. S. Siriwardane, DDRT
DDRB	5.25		5.25	4.60	1.42	6.02	CF&GF	1.50	1.50	1.50	1.50	Dr.(Mrs.) S.P.Withanage, Actg. DDRB
Administration (DF,RT)	16.49	26.28	42.76	14.44	48.19	62.62	CF&GF	15.66	15.66	15.66	15.66	Mr.D.M.S.Dissanayake, SAO
Accounts & Procurement	31.22		31.22	27.33	2.31	29.64	CF&GF	7.41	7.41	7.41	7.41	Mr. Sujith Hewage, SA
Stores	3.65		3.65	3.19	1.04	4.23	CF&GF	1.06	1.06	1.06	1.06	Mr. Sujith Hewage, SA
Work Section	55.10	26.28	81.37	48.24	24.18	72.42	CF&GF	18.10	18.10	18.10	18.10	Mr. K. Chathurange, RE
Internal Audit Unit	5.28		5.28	4.62	0.16	4.79	CF&GF	1.20	1.20	1.20	1.20	Mrs. S. Senadheera, IA
Library	6.83		6.83	5.98	1.52	7.49	CF&GF	1.87	1.87	1.87	1.87	Dr.(Mrs.) S.P.Withanage, Actg. DDRB
Adaptive Research Unit	17.66		17.66	15.46	0.90	16.36	CF&GF	4.09	4.09	4.09	4.09	Dr. (Mrs.). E. S, Munasinghe, PRO
Adv. Service and Training	53.04		53.04	46.44	3.40	49.84	CF&GF	12.46	12.46	12.46	12.46	Mr. Sanjeewa Gunarathne, RO / Actg. Head
Agriculture & Eco. Unit	3.23		3.23	2.83	0.07	2.89	CF&GF	0.72	0.72	0.72	0.72	Mr. J. K.S. Sankalpa, SRO

Programmed & Project **1. Name** **2. Duration** **3. TEC & Source of Funds**	**Allocation for 2023**			**Activity based budget**			**Source of funds**	**Financial Quarterly Targets**				**Responsible Officer's Name Designation**
	CF	**GF**	**Total (Rs. Mn)**	**Emoluments (Rs.mn)**	**Other (Rs. Mn)**	**Total**	**CF&GF**	**Q1**	**Q2**	**Q3**	**Q4**	
Bio- Chemistry	12.48		12.48	10.92	1.74	12.67	CF&GF	3.17	3.17	3.17	3.17	Mrs. Sagari Kudaligama Head
Bio Metry	9.93		9.93	8.70	0.76	9.45	CF&GF	2.36	2.36	2.36	2.36	
Genetics & PB	37.53		37.53	32.86	4.04	36.90	CF&GF	9.22	9.22	9.22	9.22	Dr.(Mrs.) S. P. Withanage, Head
Plant Pathology	4.83		4.83	4.23	2.60	6.83	CF&GF	1.71	1.71	1.71	1.71	Dr.(Mrs.).S. Fernando, Head
Plant Science	39.70		39.70	34.76	2.97	37.73	CF&GF	9.43	9.43	9.43	9.43	Mr. T. U. K. Silva,
Polymer Chemistry	14.41		14.41	12.62	2.08	14.69	CF&GF	3.67	3.67	3.67	3.67	Mr. Y. R. Somarathne, RO
RR & CA	16.75		16.75	14.67	1.81	16.47	CF&GF	4.12	4.12	4.12	4.12	Mrs. A.P. Attanayake , SRO
RR & CE	18.40		18.40	16.11	1.28	17.39	CF&GF	4.35	4.35	4.35	4.35	
Rubber Technology	23.49		23.49	20.57	1.24	21.81	CF&GF	5.45	5.45	5.45	5.45	Dr (Mrs.).D.G. Edirisinghe, Head
Soils & Plant Nutrition	24.93		24.93	21.83	2.80	24.62	CF&GF	6.16	6.16	6.16	6.16	Dr.(Mrs.). Rasika Hettiarachchi, Head
	442.00	**52.55**	**494.55**	**387.00**	**107.55**	**494.55**	**-**	**123.64**	**123.64**	**123.64**	**123.64**	

Detailed Action Plan for Research &Development: -Agronomy Departments

Annex 2

Genetics & Plant Breeding Department (Rs. Mn. 1.99)

Priority Area :- **Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners**

Objectives :- **Development of genetically improved clones to the Industry**

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Breeding Selection and Evaluation of new Genotypes using Conventional and Molecular Breeding Strategies (1999- 2025)								**1.99**		**0.22**		**0.715**		**0.72**		**0.335**			
1.1	Annual hand pollination (HP) programme	2	12		CF	No.	Expect to produce 150 new genotypes to the breeding pool	0.1	10	0.03	90	0.05	100	0.01	100	0.01	Carried out 2500 HPs and produce new genotypes to the breeding pool	Enrich the breeding pool	
1.2	Preliminary evaluation of HP mother plants and maintenance and re-establishment of bud wood nurseries and HP progenies.						Evaluate two hand pollinated progenies Expand the bud wood nursery with five new promising clones	0.25	10	0.05	40	0.075	70	0.075	100	0.05	Add genotypes for the evaluation process and select outstanding genotypes	Accelerate the evaluation process	

1.3	Multilateral clone exchange programme						Import clones from two countries (France and Vietnam)	0.1	0	0	0	0	50	0.05	100	0.05	Exchanged 5 clones	Strengthen the breeding pool	
1.4	Small scale evaluation of new genotypes (SSCTs)						Export to two countries Vietnam and Bangladesh	0.5	25	0.01	50	0.15	75	0.3	100	0.04	Select genotypes for commercial assessment	Estimate the genetic potential of clones	
1.5	Evaluation of selected HP entries under estate collaborative level (ECTs)						Prepare 2 SSCT trials	0.28	25	0.07	50	0.14	75	0.035	100	0.035	Select highly performed clones under commercial level	Enrich the Interim clone recommendation	
1.6	Evaluation of selected HP entries in collaborating with smallholders in traditional and non traditional rubber growing areas (SRTs)						Establish 5 ECT Trials	0.25	25	0.06	50	0.1	75	0.05	100	0.04	Select highly performed clones under Smallholder level	Enrich the Smallolder clone recommendation	
1.7	Molecular characterization of selected genotypes						Establish 4 SRT Trials	0.51	5	0	20	0.2	70	0.2	100	0.11	Characterized 03 genotypes	Accelerate the conventional breeding procedure with precise selections.	

Plant Science Department (Rs. Mn.2.71)

Priority Area :- Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners

Objectives :- To improve growth and abiotic stress tolerance in rubber plants

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners (continuous)								**1.17**		**0.34**		**0.29**		**0.25**		**0.29**	Best combination of stock-scion recommended	Reduction of cost of production, Productivity improvement	
1.1	Improvement of growth and abiotic stress tolerance in rubber plants	9	8	6	CF	Stock-scion combinations	4	0.27	25%	0.05	25%	0.05	25%	0.07	25%	0.10			
1.2	Different planting strategies and improved irrigation systems for rubber nurseries and field plants					Irrigation systems	1	0.35	25%	0.15	25%	0.10	25%	0.05	25%	0.05			
1.3	Tissue culture and micro propagation of rubber and other crops					No. of Methods	1	0.40	25%	0.10	25%	0.10	25%	0.10	25%	0.10			
1.4	Planting at different densities to obtain maximum economic return from latex and timber					Plant density	1	0.15	25%	0.04	25%	0.04	25%	0.03	25%	0.04			

2. Programme/ Project: Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners (continuous)							**0.12**		**0.03**		**0.03**		**0.03**		**0.03**	Certification of all rubber plants	Increase rubber land	
Inspection and certification of nursery plants (ongoing project)					6	8	6	CF	No. of plants	2000000	0.12	500000	0.03	500000	0.03			
3. Programme/ Project: Introducing other crops to be grown around tea and rubber estates (continuous)							**0.50**		**0.15**		**0.10**		**0.10**		**0.15**	Two intercropping models tested/ evaluated	Additional income generation through intercropping a number of crops with rubber	
Evaluation of intercrops under rubber	**6**	**8**	**5**	**CF**	Models	2		25%	0.15	25%	0.10	25%	0.10	25%	0.15			
4. Programme/ Project: Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners (continuous)							**0.56**		**0.15**		**0.15**		**0.16**		**0.10**	One improved rainguard technique tested	Productivity improvement in rubber lands	
Testing of different tapping systems and rain guards	**3**	**8**	**8**	**CF**	Tapping system Rain guard	1 1		25%	0.15	25%	0.15	25%	0.16	25%	0.10			

5. Programme/ Project: Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners (continuous)			**0.36**		**0.06**		**0.10**		**0.10**		**0.10**	All requested training programmes and troubleshooting attended	Improved productivity with good agricultural practices for sustainability	
Conduct training programmes / make advisory visits on nursery techniques, planting, tapping and intercropping	**10**	**8**		**CF**	No. of Programs /advisory	50	0.36	10	0.06	20	0.10			

Priority Area :- Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners.

Objectives : - Improvement of crop protection and microbiological aspects to improve the sustainability of rubber plantations.

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Replanting Screening of chemicals to control pest and diseases and clones to identify disease resistant clones (continuous)								**0.46**		**0.10**		**0.13**		**0.13**		**0.10**	Recommendation of effective pesticides to control diseases Recommendation of disease resistant	Maintenance of healthy plantation to sustain the productivity level	
1.1	Screening of chemical pesticide to effectively control the diseases	5	G2	1	CF	No of pesticides	6	0.46	25%	0.10	25%	0.13	25%	0.13	25%	0.10			
1.2	Screening of *hevea* clones against the economically important diseases					No of clones	50												
2. Programme/ Project: Studies on the biology and molecular biology of pests (continuous)								**0.52**		**0.11**		**0.14**		**0.14**		**0.13**	Biopesticide - 02	Will be used for the integrated disease management of WRD	
2.1	Biology and molecular biology of leaf and stem disease pathogens	5	G2	1	CF	Publications	3	0.52	25%	0.11	25%	0.14	25%	0.14	25%	0.13			
2.2	Biological controlling of pathogens					Biopesticide	2												

3. Programme/ Project: Studies on beneficial microbiology to explore methods to promote small scale cottage industries and to strengthen the microbiological Testings (continuous)								**0.52**		**0.11**		**0.14**		**0.14**		**0.13**	Micro cultures 100 Microbiological application2	Support the green technologies	
3.1	Maintenance of national culture collection	**5**	**G2**	**1**	**CF**	Microbe cultures	100	0.52	25%	0.11	25%	0.14	25%	0.14	25%	0.13			
3.2	Development of microbiological applications					Microbe applications	2												
4. Surveillance of potential pests and disease outbreaks to avoid unwanted sudden disease epidemics - Advisory & Training Programmes (continuous)								**0.49**		0.10		0.13		0.13		0.13	Early warnings to mitigate diseases advisory and training programmes	Empowering the stakeholders to mitigate disease conditions	
4.1	Surveys to Identify destructive disease condition and making early warnings	**4**	**G2**	**1**	**CF**	Early warnings	6	0.49	25%	0.10	25%	0.13	25%	0.13	25%	0.13			
4.2	Advisory services					Advisory visits	60												
4.3	Training programmes					Training programmes	12												

Priority Area :- Ensuring the variability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners

Objectives :- Improve soil fertility, increase fertilizer use efficiency, methods of soil, water, nutrient conservation & weed control

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1	**Programme/ Project: Evaluate the effectiveness of environmental friendly agro-management practices for enhancing fertility in rubber soils (2018 – 2025)**							**0.447**									Introduction of environmental friendly product	Enhance plant growth	
1.1	Testing of different organic amendments, organic fertilizer and biofertilizer for soil improvement	2	2	7	GF	No of organic product developed	1	0.447	25%	0.11175	25%	0.11175	25%	0.11175	25%	0.11175			
2	**Programme/ Project: Effect of nutrient management on the Pestalotiopsis disease in rubber (2020 – 2025)**							**0.1735**											
2.1	Developing a fertilizer management system to reduce disease severity of new leaf fall disease	2	2	7	GF	Development level of fertilizer management system	1	0.1735	30%	0.05205	30%	0.05205	20%	0.0347	20%	0.0347	Introduction of a effective fertilizer mgt.	Enhance plant growth	
3	**Programme/ Project: Establishment of site specific management zones under traditional rubber plantations for variable rate fertilizer (VRF) application via geo-spatial and geo-statistical approaches (2021 - 2025)**	2	2	7	GF	Number of samples collected and soil maps prepared	1	**0.398**	15%	0.0597	25%	0.0995	40%	0.1592	20%	0.0796	Mapping soil spatial variability of	Enhance soil fertility	

4	**Programme/ Project: Evaluation of the effect of Rubber Processing Effluent on Soil Properties and as a nutrient source (2021-2023)**	2	2	7	GF	No of soil properties analyzed	7	**0.1735**	25%	0.043375	25%	0.043375	25%	0.043375	25%	0.043375	Introduction of safe effluent disposal system & use as a nutrient source to soil	reduction of the cost of effluent treatment & fertilizer	
5	**Programme/ Project: Issuing certification for land suitability, site specific fertilizer applications and analyzing fertilizer samples (2018 – 2025)**							**0.298**											
5.1	Collection of leaf samples and field parameters at different sites	2	2	7	GF	Number of site specific fertilizer recommendation reports provide	40	0.148	10%	0.0148	35%	0.0518	35%	0.0518	20%	0.0296	Provide 40 - 50 site specific fertilizer recommendation reports& survey 5000 ha of rubber land	Optimize fertility levels	

5.2	Collection of soil, observe field parameters and GPS information at different sites					Number of land suitability reports provide	5	0.05	25%	0.0125	25%	0.0125	25%	0.0125	25%	0.0125	Provide 3 - 5 land suitability reports and survey 500 ha of land for planting rubber	ensure high return on investment	
5.3	Testing fertilizer, soil, leaf, water and compost samples according to the SLS guidelines					Number of analytical reports provide	100	0.1	25%	0.025	25%	0.025	25%	0.025	25%	0.025	Provide 120 analytical reports and assess 4000 parameters	Assure the application of quality fertilizers	

Bio Chemistry & Physiology Department (Rs. Mn. 0.94)

Priority Area :- Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of small and medium scale rubber estate owners

Objectives :- Reduced cost of production in rubber plantations

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Research, development and commercial introduction of low intensity harvesting strategies (continuous)								**0.3**		**0.04**		**0.04**		**0.10**		**0.12**	Adoption of LIH systems	Reduce cost of production. Increase economical lifespan of plantations. Reduce labour scariest.	
1.1	Developing low intensity harvesting strategies	4		8	CF	Development	%	0.10	25%	0.01	25%	0.01	25%	0.03	25%	0.04			
1.2	Development of site specific stimulation protocols for LIH					Ha.	20	0.10	05	0.01	05	0.01	05	0.03	05	0.04			
1.3	Introduction of LIH systems to rubber growers					Ha.	40	0.01	10	0.02	10	0.02	10	0.04	10	0.04			
2. Programme/ Project: Research and development on biochemical and physiological aspects to improve the sustainability of rubber farming (continuous)								**0.64**		**0.11**		**0.14**		**0.18**		**0.21**			
2.1	Supporting the clonal screening activities through physiological and biochemical aspects	4		8	CF	Screening	%	0.1	25%	0.02	25%	0.02	25%	0.03	25%	0.03	Productivity improvement.	Strengthen the clone selection programme. Maximize harvesting strategies.	
2.2	Screening of genotypes suitable for suboptimal climates with physiological and biochemical features					Screening	%	0.17	25%	0.03	25%	0.04	25%	0.05	25%	0.05			

2.3	Developing a method to identify yielding capacity of genotypes during early screening stages					Development	%	0.17	25%	0.04	25%	0.04	25%	0.04	25%	0.05			
2.4	Identification of effect of new leaf disease on latex diagnosis and yield determinant factors	4		8	CF	Development	%	0.1	25%	0.01	25%	0.02	25%	0.03	25%	0.04	Productivity improvement.	Strengthen the clone selection programme. Maximize harvesting strategies.	
2.5	Further development of locally formulated ethephon formulation to withstand tapping stress					Development	%	0.1	25%	0.01	25%	0.02	25%	0.03	25%	0.04			

Priority Area :- Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners

Objectives :- To develop suitable agronomic protocols to cultivate rubber in nontraditional areas and to assess its socioeconomic and environment impact

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
									Q1		Q2		Q3		Q4				
						Unit	No.		P	F	P	F	P	F	P	F			
1. Programme/ Project: Expansion of rubber cultivation to nontraditional areas (continuous)								**0.460**		**0.076**		**0.152**		**0.304**		**0.460**			
1.1	Development of suitable protocols to cultivate rubber in Dry Zone (96%)	5,6	1a 1.2		CF	No. of technologies refined	100%	0.140	97%	0.023	98%	0.023	99%	0.046	100%	0.048	Protocols for rubber cultivation in dry zone developed	Issuance of recommendations for drier climates	
1.2	Assessments on socioeconomic impact of rubber cultivation in nontraditional areas (90%)					No. of impact assessments	94%	0.140	91%	0.023	92%	0.023	93%	0.046	94%	0.048	Impact of rubber cultivation on livelihood in nontraditional areas	Attract farmers in dry zone to rubber cultivation	

1.3	Identification of agronomic and socio-economic feasibility for rubber cultivation in new areas of dry zone (60%)	5, 6	1a 1.2		CF	No. of DS divisions identified	2	0.090	65%	0.015	70%	0.015	75%	0.03	80%	0.03	New areas feasible for rubber cultivation identified (02 no.)	Introduction of rubber to new areas in dry zone	
1.4	Identification of suitable farming models for new areas (35%)					No. of farming models established	2	0.090	40%	0.015	45%	0.015	50%	0.03	55%	0.03	Area specific farming models established (02 no.)	Livelihood of farmers improved in in nontraditional areas	
2. Programme/ Project: Productivity improvement through technology development (continuous)								**0.150**		**0.037**		**0.075**		**0.112**		**0.150**			
2.1	Assess the harvesting techniques adoption and its impact on productivity and the economic life span of the rubber cultivations in the smallholder sector (0%)	5, 6	4.1, 5, 10.4		CF	No. of smallholder fields assessed	60	0.100	25%	0.025	50%	0.025	75%	0.025	100%	0.025	Level of adoption in harvesting technique identified	Remedial measures to enhance productivity proposed	
2.2	Identification of gender issues, child protection and education systems among plantation workers (65%)					No. of indices developed	3	0.050	70%	0.012	80%	0.013	90%	0.012	100%	0.013	Psycosocioeconomic status of plantation workforce identified	Secure the work force of plantation community	

Biometry Section (Rs. Mn.0.36)

Priority Area **:- All specific priorities**
Objectives **:- to improve reliability of findings of research on rubber**

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1.Programme/ Project: Improving the reliability of interpretations of research projects through appropriate statistical methods (Continuous)								**0.14**		**0.06**		**0.02**		**0.01**		**0.02**	Research support for 20 projects identified for 2022 Action Plan	Reliable recommendations through appropriate statistical methodologies (Experimentations, Analysis & Interpretation)	
1.1	Research support for research projects conducted by RRISL	No. of research projects benefited	NA		CF	No. of projects analyzed	20	0.07	15%	0.03	20%	0.04	35%	0.05	30%	0.07			
1.2	Development, modification and application of appropriate statistical methods for agronomic, socio-economic and industrial experiments in the rubber sector	No. of applications/ modifications/applications of statistical methods	NA		CF	No. of developments/modifications/applications and subsequent publications	2	0.07	15	0.03	35	0.04	70	0.05	100	0.07	02 developments/modifications /applications and subsequent	Appropriate statistical methods for analyzing data derived from rubber sector research	

2. Improving the knowledge base on climate, climate change & variability for better decision making in rubber growing areas (Continuous)								**0.22**		**0.02**		**0.10**		**0.06**		**0.04**			
2.1	Maintenance of databases on meteorological data in rubber growing areas	No. of databases maintained	13		CF	Databases maintained	5	0.06	20%	0.02	20%	0.02	30%	0.01	30%	0.01	05 databases maintained	Reliable information for stakeholders for better decision making	
2.2	Meteorological data analysis and modeling	No. of indicators analyzed	13			Publications	2		25%		25%		30%		20%		02 Publications	Reliable information for stakeholders for better decision making	
2.3	Improving the existing meteorological stations	No. of new equipment established	13		CF	Installing new/repaired equipment	3	0.16	0	0	50%	0.08	20%	0.05	30%	0.03	Installing new/repaired equipment	Data & information for smallholders	

Agriculture Economics Unit (Rs. Mn. 0.32)

Priority Area :- Ensuring the availability of raw materials necessary for the rubber industry by providing encouragement for the development of cultivations of small and medium scale rubber estate owners

Objectives :- Provide guidelines to improve the livelihoods of rubber holdings and formulation of effective policy measures

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Analysis on Socio-economic implications & sustainability issues of rubber cultivation and different policies implemented in the rubber sector (continuous)								**0.211**									Generated key indicators with reports	Improve productivity of rubber land smallholder income generation	
1.1	Trend analysis of Rubber Industry	3, 12	1, 15		CF	No.	2	0.02	65%	0.006	70%	0.002	75%	0.006	80%	0.006			
1.2	Analysis of Poverty reduction through Rubber-based farming systems					No.	1	0.08	70%	0.02	72%	0.02	75%	0.02	80%	0.02			
1.3	Sustainability Analysis of Rubber Based Farming Systems					No.	1	0.096	50%	0.004	54%	0.004	58%	0.004	62%	0.084			
1.4	Analysis of rubber sector policy changes					No.	2	0.015	70%	0.004	72%	0.004	74%	0.004	76%	0.003			
2	**Programme/ Project: Rubber Industry data management and economic analysis (continuous)**							**0.109**									Generated key indicators with reports	Improve productivity, profitability and income diversification of rubber lands	
2.1	Update data bases on rubber industry and economic analysis	3, 12	15		CF	No.	2	0.016	52%	0.004	54%	0.004	56%	0.004	58%	0.004			
2.2	Identification of low productive rubber lands through spatial analysis					No.	2	0.062	34%	0.016	36%	0.016	38%	0.015	40%	0.015			
2.3	Analysis of smallholder rubber farmers' resilience and adaptation to climate change					No.	1	0.031	5%	0.008	10%	0.008	15%	0.007	20%	0.008			

Objectives :-
- **To introduce skilled tappers in a view to enhance the adoption rate of quality of tapping while reducing the TPD rate**
- **To reduce the COP of RSS in smallholder sector**
- **To enhance the adoption rate of rubber farming practices of immature and mature up keeping to maintain the recommended stand**

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2022 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
									Q1		Q2		Q3		Q4				
						Unit	No.		P	F	P	F	P	F	P	F			
1. Programme/ Project: Strategic technology transfer approaches to improve the productivity of the smallholder sector (continuous)								**0.46**		**0.11**		**0.12**		**0.18**		**0.05**		Improved adoption of recommended technologies in smallholder sector	
1.1	Rehabilitation of rubber holdings	11,12, 13,14	8	5	CF	Holdings	80		20		20		20		20		80 rehabilitated rubber holdings		
1.2	Rehabilitation of processing centers	11,12, 13,14	8	5	CF	Centers	16		4		4		4		4		16 rehabilitated rubber processing centers		
1.3	Establishment of demonstration plots Rain Guards	11,12, 13,14	8	5	CF	Holdings	20		20		0		0		0		20 demonstration plots Rain Guards		

1.4	Establishment of demonstration plots Inter Crop	11,12, 13,14	8	5	CF	Holdings	8		0		4		0		4		8 demonstration plots Inter Crop	
1.5	Establishment of new processing centers and SS drying system	11,12, 13,14	8	5	CF	Centers	8		2		2		2		2		8 new processing centers	
2. Programme/ Project: Transfer of technologies developed by the RRISL to improve the productivity of estate sector (continuous)																		Improved adoption of recommended technologies in estates
2.1	Establishment of model clearings	11,12, 13	8	1,4	CF	Model clearings	2		0		1		0		1		2 Model clearings	
2.1	Establishment of demonstration plots - Rain guard	11,12, 13	8	1,4	CF	Demonst ration plots	2		0		1		0		1		2 demonstration plots - Rain guard	
2.2	Establishment of demonstration plots - Intercrop)	11,12, 13	8	1,4	CF	Demonst ration plots	2		0		1		0		1		2 demonstration plots - Intercrop	

3. Programme/ Project: Request based advisory visits (continuous)																	Improve the productivity	
3.1	Important issues identified - estates	4,10, 11,12, 13,14	8	1,4	CF	Advisory visits	40		10		10		10		10		40 Advisory visits	
3.2	Important issues identified - smallholdings	4,10, 11,12, 13,14	8	5	CF	Advisory visits	100		25		25		25		25		100 Advisory visits	
3.3	Group advisory for selected - estates	4,10, 11,12, 13,14	8	1,4	CF	Advisory visits	2		1		0		1		0		2 Estates	
3.4	Group advisory for selected - smallholdings	4,10, 11,12, 13,14	8	5	CF	Advisory visits	100		25		25		25		25		100 smallholdings/ processing	
4. Programme/ Project: Human resource development of all stake holders of the rubber sector (continuous)																	Improved knowledge and skill level of rubber farming technologies	
4.1	Upgrading of knowledge & skill development on rubber farming aspects (agronomic, tapping, rubber processing and marketing) - smallholder sector	4,11, 12,13, 14	8	5	CF	Smallholders	200		50		50		50		50		200 smallholders	

4.2	Upgrading of knowledge & skill development on rubber farming aspects (agronomic, tapping, rubber processing and marketing) - estate sector	4,11, 12,13, 14	8	1,4	CF	Staff of estates	100		25		25		25		25		100 staff of estates	
4.3	Introduce of new harvesters (smallholder and estate sectors)	4,11, 12,13, 14	8	1,4	CF	New harvesters	100		25		25		25		25		100 new harvesters	Skill development new harvesters
4.3	Introduction of youth as Para extension service providers	4,11, 12,13, 14	8	1,4	CF	Youths (village and estate)	20		10		0		10		0		20 para extension service providers	Development of youth as a workforce for the rubber sector
5. Programme/ Project: Development of effective extension network in the rubber sector (continuous)																	Establishment of Rubber technology transfer centers	Improved awareness and productivity improvement of rubber farming
5.1	Establishment of Rubber technology transfer centers	4,11, 12,13, 14	8	1,4, 5,9	CF	Rubber technology transfer centers	1		0		0		0		1			

Priority Area :- Encouraging rubber related products aimed at local and foreign markets
Objectives :- To provide technical assistance to entrepreneurs / industries for promotion of manufacture of value added rubber products & develop new rubber products not presently manufactured in the country to save foreign exchange incurred for imports

	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source	Total Physical Target		Annual Allocation 2023	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Technical assistance on manufacture of value added products (continuous)								**2.00**									225 entrepreneurs / industries benefited, 5 new rubber composites	Increased promotion of manufacture of value added products	
1.1	Providing assistance to industries on development of rubber compounds / products	4	G 12	9	CF	Rubber compounds / products	10	0.27	02	0.05	03	0.07	03	0.08	02	0.07			
1.2	Conducting training programs for entrepreneurs /rubber small holders					Entrepreneurs / rubber small holders	180	0.29	50	0.06	45	0.07	45	0.08	40	0.08			
1.3	Testing raw rubber, rubber compounds and products at the request of the industry					Tests	700	1.25	175	0.85	200	0.25	175	0.10	150	0.05			
1.4	Industrial trouble shooting					Trouble shootings	10	0.19	03	0.04	03	0.06	02	0.04	02	0.05			
2. Programme/ Project: Development of new rubber products (continuous)								**0.48**									2 new rubber products	An increase in the number of rubber products manufactured in the country. Saving of foreign exchange incurred for imports. User-friendly green rubber products. Employment generation.	
2.1	Development of rubber composites with nano materials for special applications		G 12	9	CF	Composites	03	0.17	02	0.09	01	0.04	-	0.02	-	0.02			
2.2	Development of rubber composites with green materials					Products	02	0.31	-	0.125	01	0.095	-	0.063	01	0.032			

Polymer Chemistry Department (Rs. Mn. 1.99)

Priority Area :- **Encouraging rubber related products aimed at local and foreign markets**
Objectives :- **To value add polymers through the modification of polymer structure and matrix & Provide guidelines to improve the livelihoods of rubber holdings and formulation of effective policy measures**

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
									Q1		Q2		Q3		Q4				
						Unit	No.		P	F	P	F	P	F	P	F			
1. Programme/ Project: To value add polymers through the modification of polymer structure and matrix (continuous)								**1.39**		**0.35**		**0.40**		**0.35**		**0.29**			
1.1	Development of modified natural rubber grades		12	8	CF	Systems	2	0.70		0.15		0.20		0.20		0.15	Value added raw materials and polymers	Sustainable rubber industry	
1.2	Peroxide Vulcanization of Natural Rubber in the presence of Multi-arm Physical Cross Linker.					systems	1	0.69		0.20		0.20		0.15		0.14			
2. Programme/ Project: Client assistant programs (on request) (continuous)								**0.60**		**0.15**		**0.15**		**0.15**		**0.15**	Client assistant programs and testing services	Foreign exchange savings	
2.1	Troubleshooting, testing services and training programs		12	9	CF	Services/ reports	500	0.60		0.15		0.15		0.15		0.15			

Raw Rubber Processing Development & Chemical Engineering Department (Rs. Mn. 1.50)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2022 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1	**Programme/ Project: Research Projects**							**0.70**		**0.175**		**0.175**		**0.175**		**0.175**	New/revised recommendations	Alternative coagulant for NRL from natural substances,	
1.1	Introduction of an alternative coagulant for NRL from natural substances	8, 11	9	8	GF	No.	6	0.20	25%	0.044	50%	0.088	75%	0.132	100%	0.20			
1.2	Sustainable use of rubber effluent water as a liquid fertilizer					No.	6	0.20	25%	0.044	50%	0.088	75%	0.132	100%	0.20			
1.3	Client requested research projects					No.	5	0.30	25%	0.075	50%	0.15	75%	0.225	100%	0.30			
2	**Programme/ Project: Trouble shooting, testing and technology transfer activities**							**0.40**		**0.10**		**0.10**		**0.10**		**0.10**			
2.1	Experiments focused on trouble shooting	9, 11, 12	9	8		No.	15	0.10	25%	0.025	50%	0.05	100%	0.075	100%	0.1	recommendations for preventing	marketable raw rubber	
2.2	Providing testing services					No.	150	0.20	25%	0.050	50%	0.10	75%	0.15	100%	0.2			
2.3	Technology transfer activities					No.	120	0.10	25%	0.025	50%	0.05	100%	0.075	100%	0.1			
3	**Get accreditation for some selected tests as per ISO 17025**							**0.40**		**0.10**		**0.10**		**0.10**		**0.10**			
3.1	Fulfilling the requirements/ conditions comply with ISO protocols	11	9	8				0.4	25%	**0.10**	50%	0.2	75%	0.3	100%	0.4	Accredited lab.	Accredited lab.	

Raw Rubber & Chemicals Analysis Department (Rs. Mn. 1.66)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1.Client assistance services (continuous)								**1.00**	**25%**	**0.20**	**50%**	**0.20**	**75%**	**0.5**	**100%**	**0.1**	Production of quality raw rubber	Produce good quality rubber product	
1.1	Issuing quality certificates for all forms of dry rubber, field latex, Centrifuged latex and Rubber processing chemicals.(600)	9	9		CF	Number of samples	600		100	0.07	200	0.06	100	0.15	200	0.05			
1.2	Sampling , inspection services and troubleshooting activities (05)					No of visits	5		1	0.07	2	0.06	2	0.20	-	-			
1.3	Conducting Training programs (05)					No. of training programmes	5		1	0.06	2	0.08	2	0.15	1	0.05			
2.Quality assurance and quality improvement of raw rubber & rubber processing chemicals (continuous)								**0.66**	**25%**	**0.40**	**50%**	**0.15**	**75%**	**0.05**	**100%**	**0.06**	Ensure the quality of raw rubber	Produce good quality rubber product	
2.1	Effect of heavy metal ions on latex quality parameters					Parameters	5	0.66	25%	0.40	50%	0.15	75%	0.05	100%	0.06			
2.2	Miscellaneous projects based on trouble shooting					-	-												

MPI Projects

Soils & Plant Nutrition Department (2021 – 2023)

Establishment of environmental friendly, economically viable slow release fertilizer technique to improve crop performance and establishment of accredited laboratory to supply good service to the rubber industry (Rs. Mn. 27.29)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1. Programme/ Project: Establishment of environmental friendly, economically viable slow release fertilizer technique to improve crop performance and establishment of accredited laboratory to supply good service to the rubber industry								**27.29**		**4.5225**		**6.8705**		**7.9205**		**7.9765**	1)Implementation of	1. Early opening for	
1.1	Preparation of encapsulated ECB &RPT	5,6	2.3, 2.4. 15.3	1	CF	No.	ECB (78,000), RPT (26000)	7.93	25%	1.9825	25%	1.9825	25%	1.9825	25%	1.9825			
1.2	Reestablishment of ECB & RPT					No.	ECB (52 000)	2.0	25%	0.5	25%	0.5	25%	0.5	25%	0.5			
1.3	Purchasing of the instrument					No.	6 (Water Distillation unit, Analytical Balance, pH meter, Conductivity meter, Fume Hood)	7.9	10%	0.79	30%	2.37	30%	2.37	30%	2.37			
1.4	Collection of growth parameters; soil & plant sample collection					No.	Leaf 100, Soil 100	0.52	25%	0.13	25%	0.13	25%	0.13	25%	0.13			

1.5	Physical and Chemical analysis of Soils samples and nutrient analysis of plant samples	5,6	2.3, 2.4. 15.3	1	CF	No.	parameters 1000	0.82	25%	0.205	25%	0.205	25%	0.205	25%	0.205	4)Required nutrients and their correct ratios will be received to the plants at correct time 5)Access to get high Standard analytical reports	3.Reduces consequent negative repercussions in the environment. 4. Reduce labour cost associated with fertilizer application under immature phase. 5.Confidence of the analytical reports 6. Income generation path will be opened for the institute	
1.6	Conducting training programme					No.	5	0.06	0%	0	30%	0.018	30%	0.018	40%	0.024			
1.7	Preparation of leaflets					No.	2	0.06	25%	0.015	25%	0.015	25%	0.015	25%	0.015			
1.8	Design, implementation, maintenance and improvement of the quality management system of the laboratory					No.	1	1.0	20%	0.2	25%	0.25	25%	0.25	30%	0.3			
1.9	Enhance laboratory facilities up to laboratory accreditation international standard ISO/IEC 17025					No.	6 Parameters (to be accredited)	7.0	10%	0.7	20%	1.4	35%	2.45	35%	2.45			

Screening of drought /stress tolerant Hevea clones for sustainable Rubber cultivation in marginal areas (Rs. Mn. 14.5)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1.Screening of drought /stress tolerant *Hevea* clones for sustainable Rubber cultivation in marginal areas								**14.5**											
1.1	Preparation of plants for screening and field establishment	2	12		CF	No. tapping task	02	2.0	Complete the preparation of	0.5	-	0.5	-	1.0	-	-	Prepare 10 clones for molecular screening and establish 4 clones for field screening	Confirm the Molecular screening results	
1.2	Complete the existing Molecular laboratory facilitation process					Level of completion	100	6.0	50%	2.0	-	4.0	100%	-	-	-	Complete and Improve the infrastructure facilities and equipped the molecular Laboratory	Provide good & healthy working environment to achieve precise results	
1.3	Molecular screening					clone	10	6.5	Completion of 1st cycle of screening	1.0	Completion of 2nd cycle of screening	4.5	Completion of all cycle of screening	1.0	-	-	Screening of ten clones for 10 genes	Select clones which indicate high drought/stress tolerant ability	

RUBBER RESEARCH INSTITUTE OF SRI LANKA

Raw Rubber Processing Development & Engineering Department (2021 – 2022)

Monitoring and optimizing the performance of rubber effluent treatment plants in Sri Lanka to improve the treatment efficiency and ensure (Rs. Mn. 10.78)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
						Unit	No.		Q1		Q2		Q3		Q4					
									P	F	P	F	P	F	P	F			
1.Programme/ Project: Monitoring and optimizing the performance of rubber effluent treatment plants in Sri Lanka to improve the treatment efficiency and ensure								**10.78**		**3.475**		**1.65**		**5.095**		**0.56**	1. Accepted laboratory for effluent water quality testing 2.Cost effective effluent treatment for small holders	1.Internationally accepted waste water quality certificate 2.User friendly and environmentally safe disposal rubber waste water	
1.1	Improvement of infrastructure facilities	2, 11, 12	3, 8, 9	8	GF	No.	1	3.76	100%	3.76	-	-	-	-	-	-			
1.2	Purchase of Scientific Equipment and accessories					No.	12	4.54	25%	1.00	50%	1.00	100%	3.54	-	-			
1.3	Services of research assistant					No.	1	0.275	25%	0.125	50%	0.15							
1.4	Training officers					No.	4	0.97	25%	0.10	50%	0.15	75%	0.36	100%	0.36			
1.5	Construction of pilot scale treatment plants					No.	10	1.235	20%	0.25	40%	0.35	80%	0.435	100%	0.20			

RUBBER RESEARCH INSTITUTE OF SRI LANKA

Plant Pathology & Micro Biology Department (2021 – 2025)

Studies on the biology and epidemiology of the Pestalotiopsis Leaf fall disease and to develop effective management strategies (Rs. Mn. 13.74)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
									Q1		Q2		Q3		Q4				
						Unit	No.		P	F	P	F	P	F	P	F			
1. Programme/ Project: Studies on the biology and epidemiology of the Pestalotiopsis Leaf fall disease and to develop effective management strategies Plant Pathology & Microbiology Department								**8.0**		**2.14**		**4.9**		**4.6**		**2.1**	No of pathogens identified. Publications on new knowledge. Effective methods to destroy the grownd inoculum. Identification of effective pesticide to control the disease. No of training programmes	Identification of the new pathogens, gaining the knowledge on their life cycles and application of the gained knowledge to formulate effective management strategies.	
1.1	Identification of the pathogen/(s) By molecular methods	2	15	7	CF	Path isolates	60		25	0.3	50	0.5	75	0.7	100	0.5			
1.2	Studies on the physiological features of the pathogen population					Path isolates	6		25	0.3	50	0.7	75	0.7	100	0.3			

1.3	Studies on the environmental factors influencing the disease development & other conditions associated with the disease development	2	15	7	CF	Path isolates	6		25	0.1	50	0.2	75	0.2	100	0	No of pathogens identified. Publications on new knowledge. Effective methods to destroy the grownd inoculum. Identification of effective pesticide to control the disease. No of training programmes	Identification of the new pathogens, gaining the knowledge on their life cycles and application of the gained knowledge to formulate effective management strategies.	
1.4	Studies on the reproductive features of the pathogen population					Path isolates	6		25	0.1	50	0.4	75	0.4	100	0.1			
1.5	Screening of fungicides for the effective against the disease – *in vitro* & *in vivo*					Trials	12		25	0.5	50	1.5	75	1.5	100	0.5			
1.6	Chemical controlling against the disease using drones					Ha.	400		25	0.5	50	0.5	75	0.5	100	0			
1.7	Studies on agronomic means of disease management					Trials	4		25	0.24	50	1.0	75	0.5	100	0.5			
1.8	Training programmes					programmes	04		25	0.1	50	0.1	75	0.1	100	0.2			

TREASURY APPROVED PROJECTS IN OPERATION

(TO BE CONTINUED; FUNDING FROM MINISTRY RESPECTED)

Adaptive Research Unit (2018 – 2023)

Developing a project to approach the Voluntary Carbon Market with the rubber cultivation in Eastern and Uva provinces for sustainable rubber industry (Rs. Mn. 16.50)

No	Activity	KPIs No. *	SDG No.	Special Priority No. **	Funding Source (CF/GF)	Total Physical Target		Annual Allocation 2023 (Rs. Mn.)	Annual Target								Expected Output	Expected Outcome	Remarks
									Q1		Q2		Q3		Q4				
						Unit	No.		P	F	P	F	P	F	P	F			
1.Developing a project to approach the Voluntary Carbon Market with the rubber cultivation in Eastern and Uva provinces for sustainable rubber industry								**16.50**		**2.10**		**5.20**		**12.30**		**16.50**			
1.1	Maintenance of monitoring plots (Present level 0%)		13		CF	No. of monitoring plots	43	0.50	25%	Verification of carbon credits	50%	0.20	75%	0.30	100%	0.50	Growth data of sample plots available	Monetary benefits obtained for environmental services of rubber cultivation by issuing Verified Carbon Standards & declaration of rubber related	
1.2	Project verification by an accredited body (Present level 0%)					Level of verification	0%	16.00	10%	Growth data of sample plots available	25%	5.00	50%	12.00	100%	16.00	Validation/verification of carbon credits		

Treasury Allocations Requirements for the January to Dec 2023

Month	Recurrent			Capital			Total Recurrent and Capital Allocation
	Rs. Million 442.00			RS. Million 30.00			
	Salaries	Other Recurrent	Total	Research	Other Assets	Total	Rs. Million
January	48.44	4.58	53.02	2.16		2.16	55.18
February	31.44	4.58	36.02	2.16		2.16	38.18
March	32.44	4.58	37.02	2.16		2.16	39.18
April	30.94	4.58	35.52	2.16		2.16	37.68
May	30.94	4.58	35.52	2.16	1.50	3.66	39.18
June	30.88	4.58	35.46	2.16	2.50	4.66	40.12
July	29.44	4.58	34.02	2.16		2.16	36.18
August	32.44	4.58	37.02	2.16		2.16	39.18
September	29.44	4.58	34.02	2.16		2.16	36.18
October	29.44	4.58	34.02	2.16		2.16	36.18
November	29.75	4.58	34.33	2.16		2.16	36.49
December	31.44	4.58	36.02	2.24		2.24	38.26
Total	**387.00**	**55.00**	**442.00**	**26.00**	**4.00**	**30.00**	**472.00**

Annex 6

Internal Audit Plan for the year 2023

Sri Lanka Rubber Research Institute

Mission of the Institute - To revitalize the rubber sector by becoming a center of excellence in providing high- quality scientific technologies to the rubber industry and transferring those technologies to rubber growers through advisory services for economic and environmentally sustainable Development.

Objectives of the Organization - To support the Government of Sri Lanka by providing the necessary technologies for sustainable development with the aim of making the county's rubber industry competitive internationally.

According to the 2022 Action Plan of the institute					**Audit Plan for the year -2023 (as per circular No- DMA/2009(1)**								
(serial No-) ref;- action plan	**Project/ Section- (Area)**	**Activities under each area identified in the Action plan (activity)**	**Annual provision (Rs. Mn)**	**Expected to be achieved by doing the activity (objectives of the activity/Expected result)**	**Areas identified for audit based on annual plan objective achievement and risk assessment (Internal Audit Activity)**	**** Risk Rating %**	**Time frame for internal Audit Operation**				**IA resource to be used**	**Remark**	
							Q1	**Q2**	**Q3**	**Q4**		**Number of reports expected to be provided**	**Nature of Audit**
1	Upgrading the modern technology	DPC(minor) Plant & machinery purchasing for audio visual & research dept.	2.5	Upgrading the modern technology in the environment	ගනුදෙනුවේ ප්‍රශස්තභාවය- සහ එම තාක්ෂණය භාවිතය හුරු කරවීම පිළිබඳඵලදායිතාවය පරීක්ෂා කිරීම	75%			√			01	Compliance Audit & performance audit
3, * 1303	Building Maintenance	DPC(minor) Building -	1.5	Improving facilities	අදාල ප්‍රසම්පාදන ලිපිගොනු	75%			√			01	Compliance Audit
6	Improving Land productivity	Establish adaption research plots	0.52	Productivity improving	කොපමණ ප්‍රමානයක්research plots) සැකසුවේ ද? ඵලදායිතාවය?	10%		√				01	performance audit

7	Upgrading nurseries	Nursery establishment at Monaragala	4.8	Expanding rubber cultivation area	මෙම ක්‍රියාදාමය තුලින් cultivation area ව්‍යාප්තවීද?	10%		√				01	performance audit
8	Main: mature & immature rubber field	adaptive research trial establishment at Pol: substation	0.2		ප්‍රතිපාදන වැය කර ඇති ආකාරය සහ ඵලදායීත්වය පරීක්ෂා කිරීම	10%			√			01	Financial audit
	Administration unit	භෞතික මූල්‍ය හා මානව සම්පත් නඩත්තුව හා පාලනය		පිරිමැසුම් දායී කාර්යක්ෂම සහ ඵලදායීපරිපාලන අංශයක් ස්ථාපිත කිරීම	වැටුප් වර්ධක තීරණය,හා ලබාදීම පරීක්ෂා කිරීම	10%				√			Compliance Audit
	Accounting divisions	Doing and reporting Financial operations		Optimum utilizing of financial assets with good transparency	Rescored maintaining-	50%	√						[redacted] Financial audit
	Work section	Supporting for institutional maintenance actives			vehicle **outsource repairing –**	60%	√					01	Compliance Audit
3	raw rubber & chemical analysis unit	Revenue collecting by using Test report issued		Earn by testing report issued – Este: income- Rs.mn9.0		10%					√	01	Financial audit
13	Board AMCOM							√	√	√	√		Organizing and report writing
14	Gratuity							√	√	√	√		accuracy checking
15	Tree up rooting							√	√	√	√		Pre- audit