



ANNUAL REPORT – 2022

SUGARCANE RESEARCH INSTITUTE

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VISION

To be the centre of excellence in sugarcane technologies and the leader in sugarcane industry development in Sri Lanka

MISSION

Development and transfer of appropriate sugarcane technologies to enhance competitiveness of, and to contribute to expand and develop the local sugarcane industry in a sustainable manner

BOARD OF GOVERNORS

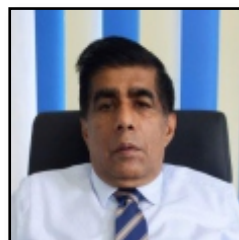


Dr. Nimal Kumarasinghe - Appointed Member (Chairman)
Up to 30.11.2022

Dr. Nimal Kumarasinghe is a Research Scientist. He has worked in Government Research Institutes for 35 years by conducting and managing research. He was a consultant in the Faculty of Graduate Studies of the University of Sri Jayewardenepura and Consultant Director of the Ministry of Minor Export Crop Promotion and he has worked as a contract and visiting academic for 20 years at various National Universities in Sri Lanka. Additionally served as a member of the Open University Council and the Agriculture Faculty Board of the Sabaragamuwa University of Sri Lanka. Further, he has served on a number of national committees, including the Pesticide Technical Advisory Committee (PETEC) and the National Species Conservation Committee of the Bio Diversity Secretariat. He is a Fellow of the Royal Entomological Society, SL Institute of Agriculture, the Afro Asian Society of Nematologists, and the Institute of Biology SL. He serves as the representative member of the Agriculture sector at the Executive Committee of the Organization of Professional Associations' (OPA).

Mr. Tissa Sunil Ratwatte - Appointed Member (Chairman)
From 01.12.2022

Mr. Sunil T. Ratwatte is a planter with decades of experience in the field. From 1977 to 1992, he has worked as an Estate Superintendent in the Janatha Estate Development Board (JEDB) and from 1992 to 2000, he has worked as an Estate Manager under Kelanivalley Plantation Company. Furthermore, Mr. Ratwatte has worked as a group manager of the JEDB during 2000-2012 and is currently the Chairman of the Board of Governors of the Sugarcane Research Institute.



Senior Prof WAJM De Costa - Appointed member
Up to 26.01.2023

Prof. Janendra De Costa is the Senior Professor and Chair of Crop Science in the Faculty of Agriculture of the University of Peradeniya. He holds of a PhD from the University of Reading in the United Kingdom and has over 30 years of research and teaching experience with a major focus on the Physiology of Crops and their tolerance to environmental stresses including climate change.

Dr WG Somarathna - Appointed Member
from 05.05. 2021

Dr W.G.Somarathne has been graduated with BA (Hons) in Economics from Sri Jayewardanepura University in 1980. He completed his Master in Agricultural Economics from Imperial College, University of London in 1987, and completed his PhD in Economics, from LaTrobe University, Melbourne, Australia in 1998. Then, he joined the premier Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) and worked there as a Senior Research Fellow and Head of the Agricultural and Environmental Resource Management Division for about 20 years. He has further worked as a Research Fellow in the SAARC - Human Resource Development Centre in Islamabad, Pakistan for 3 years.





Mr RC Watawala - Board Member
Director (Development), State Ministry of Development of Minor
Crops and Export Promotion, from 01.02. 2021

Mr. Watawala is currently working as the Director Development of the Ministry of Plantations since 2018. He graduated with a Bachelor of Science in Biology from the University of Kelaniya in 2002 and completed his MPhil degree in Environmental Chemistry from the University of Jayawardenepura and the University of Adelaide In 2009. Further, he has a Diploma in Counselling and a Post Graduate Diploma in Writing and Communication. He is a researcher and has several

research publications.

Ms Himali Bogodagedara – Nominated Member
Department of External Resources, Ministry of Finance,
up to 01.03. 2022



Ms. Himali Bogodagedara is working as a Director in the Department of External Resources of the Ministry of Finance. She has graduated with Bachelor of Arts in Business Statistics from the University of Sri Jayawardanapura. She has completed Master of Arts (Economics) from University of Kelaniya, Sri Lanka, and Master of Applied Economics from the University of Adelaide, Australia. In addition, Ms. Bogodagedara has earned a Diploma in Planning and Development from SLIDA, Sri Lanka. She is a member of Economic Association of Sri Lanka.



Ms. H.G.V.K.T. Gunawardena - Nominated Member
Department of National Planning, Ministry of Finance
From 02.03.2022

Ms. Vijini Gunawardane is currently working as a Deputy Director in the Department of National Planning (NPD), Ministry of Finance. She has graduated from University of Peradeniya with Bachelor degree in Agricultural Technology and Management in 2010. She completed her MSc in Environmental soil Science from Postgraduate institute of Agriculture, Peradeniya in 2012. In 2020, she completed an MSc in Public Policy from the Australian National University in Australia. She

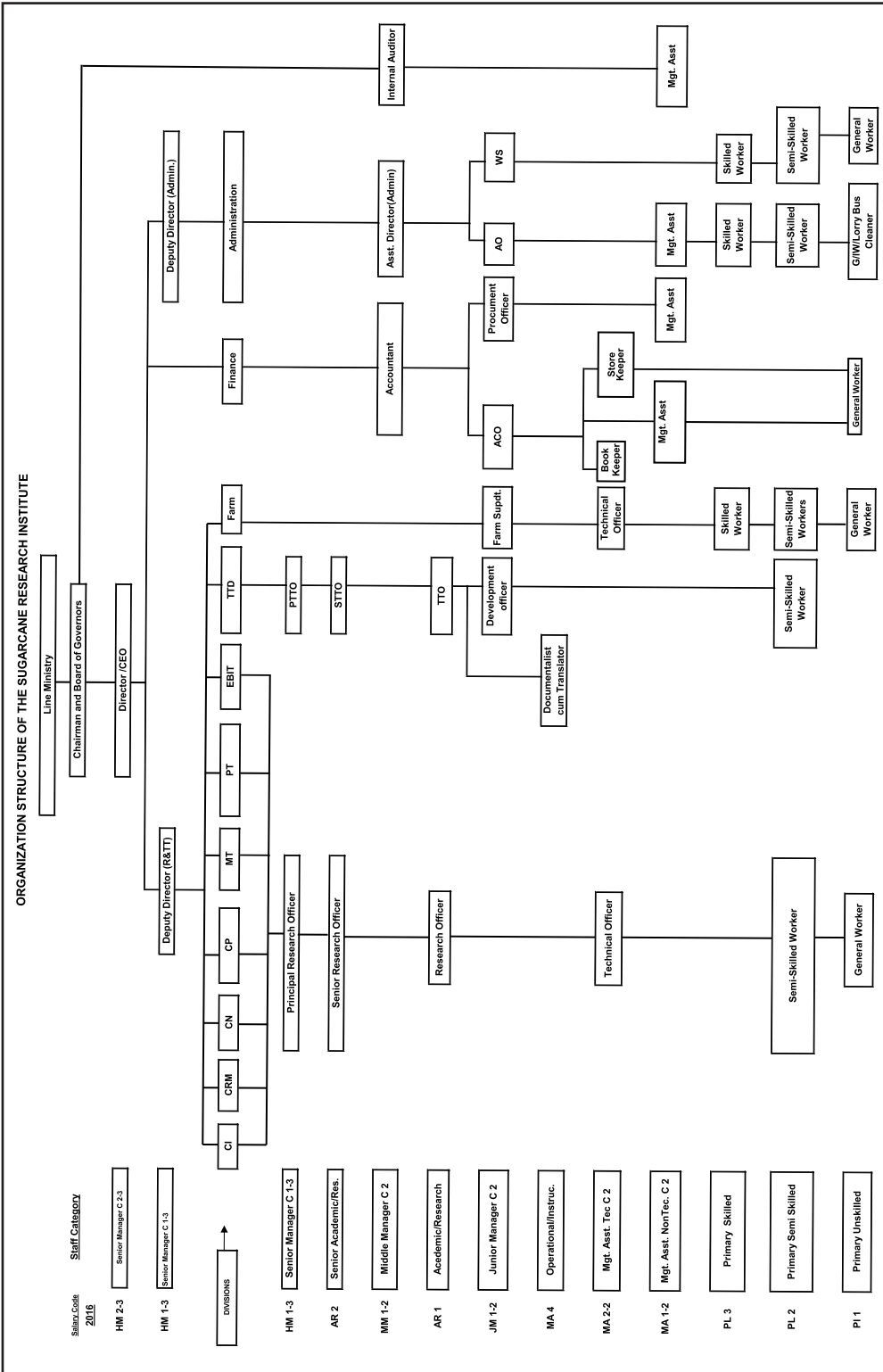
has worked as a Research Officer at Rubber Research Institute of Sri Lanka. She joined Sri Lanka Planning service in 2103 and since then, working attached to the NPD of Ministry of Finance.

Dr MS Perera - Ex-Officio member
Sugarcane Research Institute
from 01.09. 2021



Dr. MS Perera is the Director/ CEO of the institute. He has completed both his bachelor's degree and Doctor of Philosophy from the University of Peradeniya. Dr. MS Perera joined the SRI in 1993 as a Research Officer and he has held several positions including Senior Research Officer and Principal Research officer in the Technology Transfer and Development Division.

Organizational Structure of the Sugarcane Research Institute



**Approved Cadre of the Sugarcane Research Institute
As at 31.12.2022**

Designation	Salary Code	Service Level	Approved Cadre	Existing Cadre
			Permanent	Permanent
Director - CEO	HM 2 - 3	Senior	1	1
Dy. Director (Admin)	HM 1 - 3	Senior	1	1
Dy. Director (R & TT)	HM 1 - 3	Senior	1	0
Principal Technology Transfer Officer	HM 1 - 3	Senior	1	0
Principal Research Officer	HM 1 - 3	Senior	5	0
Senior Technology Transfer Officer	AR 2	Senior	1	0
Senior Research Officer	AR 2	Senior	4	4
Technology Transfer Officer	AR 1	Senior	1	1
Research Officer	AR 1	Senior	16	13
Internal Auditor	MM 1 - 2	Senior	1	1
Accountant	MM 1 - 2	Senior	1	1
Assistant Director (Administration)	MM 1 - 2	Senior	1	1
Development Officer	JM 1 - 2	Tertiary	5	4
Works Superintendent	JM 1 - 2	Tertiary	1	1
Accounting Officer	JM 1 - 2	Tertiary	1	1
Administrative officer	JM 1 - 2	Tertiary	1	1
Procurement Officer	JM 1 - 2	Tertiary	1	1
Farm Superintendent	JM 1 - 2	Tertiary	1	1
Documentarist cum Translator	MA 4	Tertiary	1	0
Book Keeper	MA 2 - 2	Secondary	1	0
Store Keeper	MA 2 - 2	Secondary	1	1
Technical Officer	MA 2 - 2	Secondary	20	16
Inspector of Works	MA 2 - 2	Secondary	-	1
MA (Typist, Clerical, Accounts Clerk, PA)	MA 1 - 2	Secondary	18	10
Tele. Operator/Receptionist	MA 1 - 2	Secondary	1	1
Work Supervisor	MA 1 - 2	Secondary		1
Mechanic	PL 3	Primary	1	1
Electrician	PL 3	Primary	2	1
Fitter	PL 3	Primary	1	1
Welder	PL 3	Primary	1	1
Carpenter	PL 3	Primary	2	1
Mason/Plumber	PL 3	Primary	1	0
Blacksmith	PL 3	Primary	1	1
Tractor Driver	PL 3	Primary	2	3
Driver	PL 3	Primary	12	8
Circuit Bungalow Keeper	PL 2	Primary	1	1
Lab/Field Attendant	PL 2	Primary	9	9
Water Pump Operator	PL 2	Primary	3	2
GW(Peon/Messenger, Sanitary Labour, Stores Labour, Office Labour, Farm Labour)	PL 1	Primary	70	52
Lorry/Bus Cleaner	PL 1	Primary	1	1
Worker	PL 1	Primary		30
Total			193	174

CHAIRMAN'S REVIEW



A total of Rs 301.00 million from the consolidated fund had been formally designated for the Sugarcane Research Institute (SRI) for the calendar year 2022. Out of this allocation, a total of Rs. 268 million is meant for recurrent expenses, and the remaining Rs. 30 million is for capital expenses. However, the institute only received Rs 262.53 million from the Treasury in 2022. It was made up of Rs. 11.5 million in capital expenditures and Rs. 251.03 million in recurrent expenses. As a result, the consolidated fund's assigned Rs 38.47 million was not received. Only 38.03% of the funds allotted for capital construction were received, even though 93.67% of the funding for recurrent expenses was obtained. Several significant policy decisions have been made, such as the preparation of the corporate strategic plan for the next three years for the institute, the creation of the Sugarcane seed cane policy, the Establishment of a Research Monitoring Committee, and the establishment of a Research Management Committee. The Sugarcane Research Institute Act and the Manual of Procedures (MOP) were being revised. According to the institute's mandate, the reviewed performance was at the following levels of satisfaction.

The report highlights various research and development activities conducted for the sugarcane industry in Sri Lanka. The activities can be categorized into the main areas: germplasm evaluation, variety selection and multiplication, crop management, pest and disease management, farm mechanization, and Technology Transfer.

Under germplasm evaluation and multiplication, the report describes the quarantine of sugarcane varieties imported from China and Vietnam, the evaluation of various series of varieties for superior characteristics, and the multiplication of promising varieties for large-scale evaluation and mill testing. Evaluation of Sugarcane Varieties for Commercial Cultivation In 2002 and 2003, 27 sugarcane varieties were evaluated for their superior characteristics before releasing them for commercial cultivation at Lanka Sugar Company – Sevanagala, Lanka Sugar Company- Pelwatte, Galoya Plantations (Private) Limited, and Ethimale Plantation (Private) Ltd. In subsequent years, 22, 24, 22, 22, 58, and 65 sugarcane varieties were evaluated and selected for large-scale evaluation at the same locations. Promising varieties from the 2004, 2006, and 2007 series, as well as SL 00 652, were multiplied for large-scale evaluation and large-mill testing.

Additionally, the institute has conducted large mill test experiments for new sugarcane varieties and distributed seed cane to various sugar companies for large-scale cultivation. The SRI has also conducted a study to identify suitable sugarcane varieties for organic sugarcane cultivation and further identify suitable gamma-ray treatments for sugarcane mutation breeding. The activities are significant as they help to identify and introduce new and improved varieties to the sugarcane industry.

Crop management activities include identifying suitable site-specific fertilizer recommendations for sugarcane-growing soils, and identifying low-cost biochar production methods. The institute has isolated nitrogen-fixing and phosphorus-solubilizing bacteria from soil and root samples collected from sugarcane fields in Sevanagala. These activities can contribute to improving the yield and quality of sugarcane crops.

Pest and disease management activities include identifying effective chemicals for controlling sugarcane moth borers and woolly aphids, and developing non-chemical strategies for pest management; the use of dried Ipil-Ipil and Gandapana leaf has been found effective in managing termite damage during germination and early growth stages. Additionally, ethanol and methanol extractions of *L. camara* have proven useful in managing white leaf disease vectors. Furthermore, the SRI has recommended using pheromone traps for monitoring and mass trapping the INB population. These activities can contribute to reducing losses due to pest and disease damage.

The SRI has also made progress in testing and developing agricultural machinery, such as fabricating a tractor-mounted pellet fertilizer applicator and a trash-cutting machine prototype. The institute has also fabricated a drip pipe laying machine and continued developing an IoT-integrated machinery management system.

Three public-private partnerships research were conducted; a) a research program to evaluate drip irrigation systems in sugarcane farming at Sevanagala b) the evaluation of the acceptability of Yara as a replacement fertilizer and c) the performance of a granular insecticide, Chlorantraniliprole 0.4%, for the management of borer pests proceeded throughout the year. The services provided to the industries during the year 2022 included; Inspecting and guiding the modification of the existing hot water treatment (HWT) plant at Lanka Sugar Company Limited, Sevanagala. Evaluating three grab loaders at Sevanagala.

In addition, the SRI has conducted and coordinated 13 training and awareness programs for farmers and field officers, reaching a total of 454 participants. The institute has distributed advisory leaflets and information sheets on various aspects of sugarcane cultivation and established 42 field demonstration sites in sugar mill areas. The SRI has also implemented the SRI TTD eSMS service for researchers, extension officers, and farmers. Finally, the institute has published two volumes of the SRI newsletter. The development of an android-based smart mobile application to deliver updated sugarcane research information to stakeholders has been done and arrangements are made to launch the app for the use of stakeholders including growers, industry staff, etc.

The SRI has also established a seed cane multiplication nursery for a new jaggery production variety and continued maintenance of another seed cane nursery to provide seed cane for Skandhapuram farmers. and evaluated three grab loaders at Sevanagala. Finally, the institute has continued compost production using waste matter and established an information and promotion center at the SRI Colombo office.

Among the other initiatives pursued in relation to the development of the sugar sector was the formulation of the Sugarcane Sector Policy, and the evaluation of a technical report on the integrated sugar development Project at Anuradhapura (5000 TCD). Research collaborations were maintained with overseas organization ; the Yunan Agricultural Science Academy in China. Further, suggestions on Technical Cooperation with Brazil in the Agricultural sector, particularly the sugarcane industry have been submitted through the Ministry of Plantation Industries for the proposed first round of bilateral political consultations between Sri Lanka and Brazil and initiated making an MOU with Thal Industries Sugar Crops Research Institute (TSCRI), Tehsil Lalian, District Chiniot of the Islamic Republic of Pakistan on the exchange of sugarcane breeding materials.

The necessary tools and equipment, such as those for preparing machinery as well as software, were given to the appropriate research divisions, increasing the possibility of developing novel

technologies. During the year, work was done on the institute quarters' infrastructure facilities, SRI circuit guesthouse, and auditorium.

The relevant members of the staff received five long-term training to improve their skills. Four additional research officers maintained their postgraduate research programs while one research officer completed a Ph.D. degree programme. The Assistant Director (Administration) completed his postgraduate study, which was pertinent to his respective subject area.

The Institute's main research station at Uda Walawe, the Breeding station at Deniyaya, the Quarantine station at Hantane, and the Pathology farm at Siyambalanduwa all ran according to their working schedules under crisis situations that limited funds and fuel supply, etc. without interfering with the scheduled research and development activities. Lack of trained staff, particularly for scientific and upper managerial posts, and difficulty hiring staff in accordance with the recruitment rules in the current circumstances were the major impediments to the institute's performance.



Mr. T. Sunil Ratwatte
Chairman

DIRECTOR'S REVIEW



The Sugarcane Research Institute continued its functions in the year 2022 to contribute to developing the sugarcane industry of Sri Lanka by conducting research for generating new knowledge/technologies on sugarcane, disseminating the technical know-how to sugar companies, farmers, and other relevant stakeholders, producing and supplying foundation seed cane and expanding sugarcane cultivation for small-scale processing industries. A long-term research program consisting of sugarcane crop improvement, crop and resource management, crop nutrition, crop protection, farm mechanisation, and processing, and product development was continued aiming at developing technical know-how to cater to the needs of the development of the sugarcane industry in the country. A technology transfer program was carried out to disseminate the knowledge/technologies generated by the research program to sugar companies, farmers, and other relevant stakeholders. A development program consisting of the production of foundation seed cane of the new sugarcane varieties recommended by the institute was also continued.

There are many promising varieties bred after the year 2002 and are at different stages of selection in the variety development programme. The major accomplishments related to the quarantine of imported sugarcane varieties, large-scale evaluation of sugarcane varieties, multiplication of promising varieties, evaluation of foreign varieties, and sugarcane mutation breeding are stated below;

30 sugarcane varieties imported from China were quarantined and Twenty-two varieties imported from Vietnam were released for the sugarcane germplasm.

Before releasing for commercial cultivation, 27 varieties of the 2002 series and 27 varieties of the 2003 series showing superior characteristics were evaluated at Lanka Sugar Company - Sevanagala, Lanka Sugar Company- Pelwatte, Galoya Plantations (Private) Limited, and Ethimale Plantation (Private) Ltd... Seed cane of 2003 series selected new varieties were distributed to Sevanagala, Pelwatta, Ethimale, and Gal-Oya sugar companies for starting large-scale cultivations. To evaluate the superior characteristics of sugarcane varieties, 22 varieties from the 2006 series, 24 from SL 2007 series, 22 from SL 2008 series, 22 from the 2009 series, 58 from the 2010/2011 series, and 65 from the 2012 series were evaluated at Lanka Sugar Company - Sevanagala, Lanka Sugar Company- Pelwatte, Galoya Plantations (Private) Limited, and Ethimale Plantation (Private) Ltd. Promising varieties from 2004, 2006, and 2007 series and SL 00 652 were multiplied for large-scale evaluation and large mill tests at Lanka Sugar Company (Private) Limited, Sevanagala and Pelwatte, Gal Oya plantations (Private) Limited, Higurana, and Ethimale Plantations (Private) Limited, Siyambalanduwa.

Selected 20 foreign varieties were evaluated at Lanka Sugar Company (Private) Limited, Sevanagala, and Pelwatte, and multiplied at Gal Oya plantations (Private) Limited, Higurana and Ethimale Plantations (Private) Limited, Siyambalanduwa for future evaluation. Suitable gamma-ray treatments for sugarcane mutation breeding were identified. Mutated plants were evaluated for desirable characteristics such as high cane and sugar yields and disease resistance.

During the 2022 crossing season, 912 crosses were made. These crosses are directional for sugar and cane yield improvement and disease resistance (smut, leaf scald, and white leaf diseases). Processing of true seeds of these crosses is in progress. *Ex-situ* conservation of

1,659 sugarcane accessions in duplicate plots at Sugarcane Breeding Station at Enselwatte, Deniyaya, and maintaining the breeder's seed garden with 45 commercial and near-commercial varieties at the Sugarcane Research Institute, Uda Walawe.

The institute also conducted large mill test experiments for SL 2000 series new varieties (SL 00 95, SL 00 354, SL 00 603) at Lanka Sugar Company (Pvt) Ltd Pelwatte. Further, a study to identify suitable sugarcane varieties for organic sugarcane cultivation was conducted.

Under the sugarcane crop and resource management, a study on the impact of climate change revealed that the length of the Maha rainy season showed a decreasing trend of 7.6 days per decade at Sevanagala. A public-private partnership research programme was conducted on evaluating drip irrigation systems in sugarcane farming in the Sevanagala sugar industry area.

Recommendations on soil fertility management are provided by the research conducted under the crop nutrition programme. Site-specific fertilizer recommendation models were fine-tuned for sugarcane-growing soils under four soil categories based on soil Phosphorous and Potassium concentrations. Further, the most suitable method to produce low-cost biochar from sugarcane waste material and crop residues was identified. Digitized soil parameter maps were developed for Sevanagala and Pelwatte sugarcane growing areas. Suitable combinations of organo-mineral fertilizer pellets were produced and a research trial was maintained up to ratoon 1 to evaluate their performance on sugarcane cultivation. ZnSO₄ application was found to improve cane and sugar yields in a study conducted on Zinc Application. Nitrogen-fixing and phosphorus-solubilizing bacteria were isolated from the soil and root samples that were collected from Sevanagala sugarcane cultivated fields.

Under sugarcane crop protection, the highest priority was given to controlling white leaf disease (WLD) and sugarcane borers. The institute also regularly monitored the disease and pest situations in commercial sugarcane plantations, and the relevant officials of the sugar companies were made aware of the prevailing situations to enable them to take timely action to contain the spread of diseases and pests. Furthermore, regular awareness and training programmes were conducted for farmers and field-level officers to improve and update their knowledge on the management of sugarcane diseases and pests. The Sugarcane Research Institute continued its efforts to develop non-chemical strategies for pest management in sugarcane cultivation. Incorporation of dried Ipil-Ipil (*Leucenea leucocephala*) / Gandapana (*Lantana camara*) leaf to the furrows during the time of planting at the rate of 40 g/m effectively managed termite damage during germination and early growth stages. Furthermore, ethanol extract from *Lantana camara* leaves, *Leucaena leucocephala* leaves and pods proved to be effective in the seed set dipping technique to protect seed sets from termites at the early germination stage. Neem seed ethanol extraction was found to be effective in managing Sugarcane Woolly Aphids and *Pyrilla perpusilla* Walker at a concentration of 10% (W/V). Additionally, ethanol and methanol extractions of *L. camara*, 25 g/l concentration, proved to be effective for white leaf disease (WLD) vector management.

The institute recommended using pheromone traps to monitor and mass trap the population of the sugarcane shoot borer (INB). 5-6 Delta traps with pheromone lures per hectare at spindle level were recommended for monitoring, while 20 Delta traps with pheromone lures per hectare at spindle level from the 4th to 11th months of the crop were recommended for mass trapping.

Chlorantraniliprole 0.4% (w/w) G was found to be an effective chemical for controlling sugarcane moth borers. The effective concentration is 16 kg/ha as 4 soil applications near to root zone in 55-day intervals from planting to 5½ month age of the sugarcane crop.

Under the Mechanisation technology programme, the existing hot water treatment (HWT) plant at Lanka Sugar Company Limited, Sevanagala was inspected and modified based on guidance. HWT is a critical step in preventing the spread of sugarcane diseases and ensuring the quality of sugarcane planting material. A four-wheel tractor-mounted pellet fertilizer applicator (SRI-FX 401) was fabricated and tested in Uda Walawe and Gal Oya sugarcane fields. The use of precision fertilizer application equipment can increase fertilizer use efficiency, reduce costs, and minimize environmental impact. Construction activities of the trash-cutting machine were completed by 95%. Trash cutting is an essential step in sugarcane harvest and can contribute to improved crop yield and quality. The use of mechanized trash cutting can reduce labor costs and improve efficiency.

The institute developed an android-based smart mobile application to deliver updated sugarcane research information and expert knowledge to the sugarcane industry stakeholders in Sri Lanka.

Even though the planned training and promotional activities were curtailed due to fuel limitations etc. in the country, the promotion of the application of the research findings was continued by conducting a technology transfer program. The emphasis was placed on the promotion of SRI-developed sugarcane varieties and intercropping with sugarcane. Programmes were also conducted to improve the knowledge of the farmers and field officers of the sugar companies on soil fertility management and disease and pest management. The institute conducted and coordinated 13 training/awareness programs on sugarcane cultivation and related subject areas for 454 farmers and field officers of the sugar industry. The following activities were also carried out to improve the knowledge of field officers, farmers, and other stakeholders:

- Establishing and maintaining 42 field demonstration sites on varieties and intercropping with sugarcane in sugar mill areas.
- Publishing two volumes of the SRI Newsletter (*Puwath Hasuna* of SRI).
- Continuing SRI TTD eSMS service for transfer extension messages between researchers, extension officers, and farmers in the sugarcane sector. Continuing the sharing of sugar industry information through the SRI FB page and updating the SRI website.
- Three observational fields were maintained on organic sugarcane farming at SRI research farm, Galoya, and Ethimale sugar companies in compliance with the revised research program of SRI on organic sugarcane farming. The observations are being obtained and awareness programs for agricultural staff of sugar companies and farmers were conducted.
- An information and promotion Centre was also established at SRI Colombo Office.

In addition, the promotional activities were continued; The institute continued to produce compost in the compost unit in the research farm and produced 100mt of compost using waste matter. Producing 2402 kg of jaggery from the cane harvested at field trials.

The institute also provided training services to students from schools, technical colleges, agriculture schools, and universities. In addition, the necessary information was provided to interested parties for their involvement in the sugarcane industry development in the country.

The following activities were also carried out to contribute to developing the sugar industry:

- A seed cane multiplication nursery was established at Vannerikulam, Kilinochchi with the new variety (SL 04 624) especially released for jaggery production. The institute also maintained the Vannerikulam seed cane nursery to provide seed cane for Skandhapuram farmers in 2023.

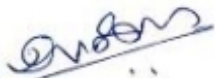
During the year under review, vacancies could not be filled due to the restrictions imposed by the government, so the service of eight development officers' was obtained to strengthen the manpower requirements of the institute. Capacity building of staff was continued by providing long-term and short-term training opportunities. One Research Officer in Crop Improvement Programme was offered a Fellowship Research Programme by Yunan Sugarcane Research Institute, China to conduct joint research with YSRI on sugarcane variety development under the MOU between YSRI and SRI. The previously-released three Research Officers continued their postgraduate studies. One of the Development Officers was continued the given opportunity for long-term post-graduate training while Assistant Director (Administration) was completed the given opportunity for long-term post-graduate training in the subjects relevant to work at the institute. Furthermore, research, technical, accounting, and administrative staff were provided with opportunities for attending short training courses relevant to their work.

To provide the infrastructure requirements for research and development activities and for providing a congenial working environment for the staff, the following activities were continued:

- i. Renovation of the old office building for an auditorium, and rehabilitation of the perimeter fence.
- ii. Procurement of important laboratory instruments, equipment and software.

The work on amendment of the Sugarcane Research Institute Act to broaden its scope and authority according to the current as well as future needs of the development of the sugarcane industry in the country was continued.

The main limiting factor for fulfilling the mandate of the institute was a shortage of trained and experienced manpower and the non-availability of finance in time. Recruiting and retaining staff at scientific, technical, and managerial grades has to be given high priority for the sustenance of the institute to fulfil its mandated functions.



Dr. M.S.Perera
Director/Chief Executive Officer

PROGRESS AND PERFORMANCE REPORT

Progress and Performance Report of Sugarcane Research Institute by 31 December 2022

1. Sugarcane Research Institute Action Plan – 2022- Progress of Special Projects / Activities

Seventy-three (73) activities were carried out under eight major research and development projects in the Sugarcane Research Institute Action Plan 2022.

The physical and financial progress of the seven projects undertaken as on December 31, 2022, under the Action Plan of the Sugarcane Research Institute – 2022 has been mentioned ahead of the targets in Tables 01 and 02.

Table 1. Percentage of physical progress against the target for projects carried out as per Sugarcane Research Institute 2022 Action Plan as on 31 December 2022

Projects	Physical Progress (%)	
	Targeted	Achieved
1. Development of superior sugarcane varieties	100	92
2. Development of improved crop management practices	100	100
3. Development of soil fertility management practices for sugarcane cultivation	100	95
4. Development of pest and disease management practices	100	96
5. Development/introduction of suitable machinery for sugarcane cultivation	100	92
6. Development and streamlining of the value-added production process in sugarcane cultivation	100	89
7. Dissemination of knowledge and technology on sugarcane cultivation	100	79

Table 2. Percentage of financial progress against the target for projects undertaken as per the 2022 Action Plan of the Sugarcane Research Institute as of 31 December 2022

Projects	Financial Progress (Mn. Rs)		
	Target	Achieved	Progress (%)
1. Development of superior sugarcane varieties	33.94	28.07	83
2. Development of improved crop management practices	15.43	15.43	100
3. Development of soil fertility management practices for sugarcane cultivation	13.71	11.66	85
4. Development of pest and disease management practices	18.30	16.74	91
5. Development/introduction of suitable machinery for sugarcane cultivation	7.19	5.94	83
6. Development and streamlining of the value-added production process in sugarcane cultivation	8.55	5.98	70
7. Dissemination of knowledge and technology on sugarcane cultivation	21.35	19.26	90

2. Achievements in 2022

1. Quarantining of 30 sugarcane varieties imported from China, Twenty-two varieties imported from Vietnam were released for the sugarcane germplasm.
2. Evaluation of 27 varieties of the 2002 series and 27 varieties of the 2003 series showing superior characteristics before releasing for commercial cultivation at Lanka Sugar Company – Sevanagala, Lanka Sugar Company- Pelwatte, Galoya Plantations (Private) Limited, and Ethimale Plantation (Private) Ltd.
3. Evaluation of 22 varieties from the 2006 series, 24 from SL 2007 series, 22 from SL 2008 series, 22 from the 2009 series, 58 from the 2010/2011 series, and 65 from the 2012 series showing superior characteristics before large-scale evaluation at Lanka Sugar Company – Sevanagala, Lanka Sugar Company- Pelwatte, Galoya Plantations (Private) Limited, and Ethimale Plantation (Private) Ltd.
4. Multiplication of promising varieties from 2004, 2006, and 2007 series and SL 00 652 for large-scale evaluation and large mill test at Lanka Sugar Company (Private) Limited, Sevanagala and Pelwatte, Gal Oya plantations (Private) Limited, Higurana, and Ethimale Plantations (Private) Limited, Siyambalanduwa.
5. Evaluation of selected 20 foreign varieties at Lanka Sugar Company (Private) Limited, Sevanagala and Pelwatte, and multiplication of those varieties at Gal Oya plantations (Private) Limited, Higurana and Ethimale Plantations (Private) Limited, Siyambalanduwa for future evaluation.
6. Identification of suitable gamma-ray treatments for sugarcane mutation breeding and mutated plants are evaluated for desirable characteristics such as high cane and sugar yields and disease resistance.
7. Identification of the length of the *Maha* rainy season showed a decreasing trend of 7.6 days per decade at Sevanagala.
8. Fine-tuning the site-specific fertilizer recommendation model for sugarcane-growing soils under four soil categories based on soil Phosphorous and Potassium concentrations.
9. Identification of the most suitable method to produce low-cost biochar from sugarcane waste material and crop residues and further, identifying the improvement in soil physicochemical characteristics with added biochar during the first three months after planting.
10. Development of digitized soil parameter maps for Sevanagala and Pelwatte sugarcane growing areas.
11. Production of suitable combinations of organo-mineral fertilizer pellets and maintaining a research trial up to ratoon 1 to evaluate their performance on sugarcane cultivation.
12. Identifying that the $ZnSO_4$ application has improved the cane and sugar yields.
13. Confirmation of that Chlorantraniliprole 0.4% (w/w) G is an effective chemical for controlling sugarcane moth borers and effective concentration is 16 kg/ha as 4 soil applications near to root zone in 55-day intervals from planting to 5½ month age of the sugarcane crop.
14. Identification of two *Erianthus* accessions namely PG56 and MINDANOO having the potential to use as dead-end trap plants for internode borer (INB) female moths.
15. Developing non-chemical strategies for sugarcane pest management.
16. Incorporation of dried Ipil- Ipil (*Leucenea leucocephala*) / Gandapana (*Lantana camara*) leaf to the furrows during the time of planting at the rate of 40 g/m effectively manage termite damage during germination and early growth stage.

17. Ethanol extract from *Lantana camara* leaves, *Leucaena leucocephala* leaves and pods is effective in the seed set dipping technique to protect seed sets from termites at the early germination stage.
18. Neem seed ethanol extraction is effective over Sugarcane Woolly Aphid and *Pyrilla perpusilla* Walker management at 10% (W/V) concentration.
19. Ethanol and methanol extractions of *L. camara*, 25 g/l concentration is effective for white leaf disease (WLD) vector management.
20. Giving recommendation to use pheromone traps to monitor INB population by keeping 5-6 Delta traps with pheromone lures per hectare at spindle level and replacing sticky sheets in fortnightly intervals.
21. Giving recommendation to use pheromone traps to mass trapping INB population by keeping 20 Delta traps with pheromone lures per hectare at spindle level from the 4th month to 11th months of the crop and replacing sticky sheets in fortnightly intervals.
22. Isolating nitrogen fixing and phosphorus solubilizing bacteria from the soil and root samples collected from Sevanagala sugarcane cultivated fields.
23. Producing 2402 kg of jaggery from the cane harvested at field trials.
24. Inspecting and guiding the modification of the existing hot water treatment (HWT) plant at Lanka Sugar Company Limited, Sevanagala.
25. Completing the fabrication of a four-wheel tractor-mounted pellet fertilizer applicator (SRI-FX 401) and testing it in Uda Walawe and Gal Oya sugarcane fields.
26. Completing 95% of construction activities of trash cutting machine (Prototype) SRI-TX 401.
27. Fabricating drip pipe laying machine (SRI- IRX 401).
28. Continuing development of IoT-integrated machinery management system.
29. Conducted/coordinated 13 training/awareness program on sugarcane cultivation and related subject areas for 454 farmers and field officers of the sugar industry.
30. Distribution of advisory leaflets and information sheets on various aspects of sugarcane cultivation and establishment and maintenance of 42 field demonstration sites in sugar mill areas.
31. Continuous implementation of SRI TTD eSMS Service among researchers, extension officers, and farmers.
32. Publication of two volumes of the SRI newsletter (Puwath Hasuna of SRI).

3. Special programs/projects/activities undertaken for the development of the sugarcane sector.

1. Development of an android-based smart mobile application to deliver updated sugarcane research information and expert knowledge for the sugarcane industry stakeholders in Sri Lanka.
2. A program for introducing imported sugarcane varieties with high sugar content which are presently available in the breeder's seed stock of SRI for commercial cultivation was continued.
3. Public-private partnership research programme on evaluating drip irrigation systems in sugarcane farming was implemented at the Sevanagala sugar industry area.
4. Establishment of a seed cane multiplication nursery at Vannerikulam, Kilinochchi with the new variety (SL 04 624) especially released for jaggery production.
5. Maintenance of Vannerikulam seed cane nursery to provide seed cane for Skandhapuram farmers in 2023.
6. Conducting large mill test experiments for SL 2000 series new varieties (SL 00 95, SL 00 354, SL 00 603) at Lanka Sugar Company (Pvt) Ltd Pelwatte.
7. Distribution of seed cane of 2003 series selected new varieties to Sevanagala,

Pelwatta, Ethimale, and Gal-Oya sugar companies for starting large-scale cultivations.

8. Conducting a study to identify suitable sugarcane varieties for organic sugarcane cultivation.
9. Evaluating three grab loaders at Sevanagala.
10. Continuation of compost production in compost unit in research farm and produced 100mt of compost using waste matter.
11. Information and promotion Centre was established at SRI Colombo Office.

3. Financial Progress (Capital / recurrent / approved amount / Imprests received / financial progress / bills in hand) (as of 31.12.2022)

Details of Expenditure	Approved amount (Rs. Million)	Imprest received (Rs. Million)	Financial Progress (Rs. Million)	Bills in hand (Rs. Million)
Capital	33	11.50	11.50	-
Recurrent	268	251.03	262.07	11.04
Recurrent- SRI	9.7	9.7	9.22	-
Total	310.70	272.23	282.79	11.04

5. Special projects/programs/activities to be carried out in the year 2023

In addition to the general research and development activities carried out by the Sugarcane Research Institute, the following special projects/programs/activities will be carried out in the year 2023.

1. Continuation of the program of introduction of imported high sugar sugarcane varieties currently available in the seed stock in the Sugarcane Research Institute for commercial cultivation.
2. Continuation of the program to introduce high-productivity sugarcane varieties into the sugar industry for field-level monitoring.
3. Conducting life cycle assessment (LCA) at Sevanagala and Ethimale, data analysis in progress.
4. Continuing the development of IoT-integrated machinery management system.
5. Development of Information and Product Commercialization Center at Colombo Office of Sugarcane Research Institute.
6. Production and supply of primary seed cane of new improved sugarcane varieties for the sugarcane industry for further multiplication.
7. Development of Strategies for the Application of precision agricultural technology to sugarcane cultivation
8. Updating the Sugarcane Research Institute website so that information about sugar manufacturing is available.
9. Providing necessary technical knowledge on sugarcane crop management including fertilization with special emphasis on the use of organic fertilizers, pest, and disease management, improving the fertility of degraded soils, etc.
10. Carrying out crop protection services to prevent the spread of pests and diseases in sugarcane plantations

DIVISIONAL REPORTS



CROP IMPROVEMENT DIVISION

CROP IMPROVEMENT DIVISION

Staff

Ms. AMMS Perera BSc, MSc	-	Senior Research Officer and Head
Mr. KP Wickramasinghe BSc (Agric.), M Phil	-	Research Officer (Leave for fellowship program since October 2022)
Ms. RDRR Ranathunga BSc, MSc	-	Research Officer (resigned on 28.04.2022)
Ms. ALC Kumari	-	Senior Technical Officer (resigned on 31.05.2022)
Mr. RA Premachandra	-	Senior Technical Officer (retired on 29.01.2022)
Mr. D Weerasinghe	-	Senior Technical Officer
Mr. MKD Ubesena	-	Technical Officer
Mr. SH Karunarathne	-	Lab/Field Attendant

Achievements

Research

- Quarantining of 30 sugarcane varieties imported from China, under observations of Crop Protection division.
- *Ex-situ* conservation of 1,659 sugarcane accessions in duplicate plots at Sugarcane Breeding Station at Enselwatte, Deniyaya, and maintaining the breeder's seed garden with 45 commercial and near-commercial varieties at the Sugarcane Research Institute, Uda Walawe.
- Evaluation of selected 20 foreign varieties at Lanka Sugar Company (Private) Limited, Sevanagala and Pelwatte, and multiplication of those varieties at Gal Oya plantations (Private) limited, Higurana and Ethimale Plantations (Private) Limited, Siyambalanduwa for future evaluation.
- Performing 912 crosses using field lantern and solution crossing techniques. These crosses are directional for sugar and cane yield improvement and disease resistance (smut, leaf scald and white leaf diseases). Processing of true seeds and storing them in refrigerator at 20 °C.
- Selection of 3,000 clones/varieties with desirable features from stage 1 to Preliminary Yield Trial of SL 2018 series – SL 2013 series.
- Conducting final step evaluation prior to the large-scale evaluation; 22 from 2006 series, 24 from SL 2007 series, 22 from SL 2008 series, 22 from 2009 series, 58 from 2010/2011 series and 65 from 2012 series.
- Multiplication of promising varieties at Uda Walawe to obtain seed material for large scale evaluation at different sugarcane growing areas; 25 from 2005 series, 22 from 2006, 24 from 2007 and 22 from 2009 series.
- Multiplication of promising varieties from 2004, 2006, 2007 series and SL 00 652 for large scale evaluation and large mill test at Lanka Sugar Company (Private) Limited, Sevanagala and Pelwatte, Gal Oya plantations (Private) limited, Higurana, and Ethimale Plantations (Private) Limited, Siyambalanduwa.
- Large mill testing of SL 00 95, SL 00 603 and SL 96 128 at Lanka Sugar Company (Private) Limited, Pelwatte.

- Confirmation of that, white leaf disease positive parents can be transmitted the disease to progeny through true-seeds.
- Identification of suitable gamma-ray treatments for sugarcane mutation breeding and mutated plants are evaluating for desirable characters such as high cane and sugar yields and disease resistance.
- All sugarcane accessions collected at the local expedition during 2018 and most of the accessions collected during 2019 were genetically 70% relatedness to the high-sugar pure *S. officinarum*.
- Optimization of RNA extraction, cDNA conversion and PCR protocols for gene expression studies and the project will be continued.

Training Trainees

- Supervising the study titled “identification of mutation of gamma irradiated tissue cultured sugarcane (*Saccharum* spp.) plants using molecular techniques” carried out by Mr. A.G.T. Nethwidu, an undergraduate student of the Uva Wellassa University of Sri Lanka, for his B.Sc. (Tec.) degree.
- Supervising the study titled “Determination of sugarcane pollen viability, germination and seed setting in natural condition and seed germination in different potting media” carried out by Mr. G.R.C.S. Gunasekara, an undergraduate student of the Uva Wellassa University of Sri Lanka, for his B.Sc. (Tec.) degree.
- Training 2 students from *National Apprentice and Industrial Training Authority (NAITA)* Rathnapura, one undergraduate from Faculty of Technology, University of Ruhuna, one undergraduate from *Aquinas College* and one undergraduate from *China University*.



CROP AND RESOURCE MANAGEMENT DIVISION

CROP AND RESOURCE MANAGEMENT DIVISION

Staff

Dr. ALC De Silva BSc (Agric.), MPhil, PhD	-	Senior Research Officer and Head
Mr. LMJR Wijayawardhana BSc (Agric.), MPhil	-	Research Officer
Mr. GAA Chaturanga BSc (Agric.), MSc	-	Research Officer
Mr. PRB Chandrasena BSc (Agric.), MSc	-	Farm Superintendent
Mr. WG Nimal	-	Senior Technical Officer
Mr. IP Manawadu HND (Electronic Engineering)	-	Technical Officer
Mr. DMGH Chathuranga Dip (Agric.)	-	Technical Officer

Achievements

Research

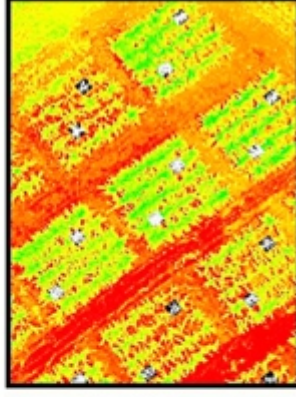
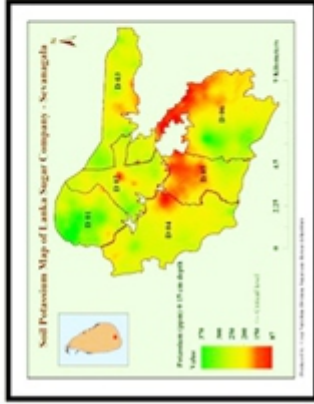
- Conducting large mill test experiments for SL 00 95, SL 00 354 and SL 00 603 varieties.
- Distribution of hot water treated seedcane for establishing large block trials of 2003 series selected varieties at sugar industry sites.
- Initiation of research experiments for improving soil quality in organic sugarcane cultivation.
- Identification of that the length of the *Maha* rainy season showed a decreasing trend of 7.6 days per decade at Sevanagala.
- Identification of that the annual rainfall will be expected to increase by 5.4% and 15.8% in 2030 and 2050 respectively at Sevanagala area.
- *Yala* season planting sugarcane will increase cane yield by 8.3% and 13.7% in 2030 and 2050 respectively due to climate change. However, *Maha* season planting crop will not show such increases.

Development

- Introduction of new sugarcane SL 04 624 variety especially released for jaggery production to Kilinochchi area.
- Providing technical support to expand sugarcane cultivation in Skandhapuram, Kilinochchi.
- Maintenance of Vannerikulam seedcane nursery.
- Cane selling to Kilinochchi local market for syrup production.
- Providing technical support on sugarcane cultivation for Civil Security Department in Viswamadu, Kilinochchi.

Services

- Land preparation of 45 acres for research activities and seed cane nursery in research farm.
- Supplying 298.52 metric tons of factory cane to sugar factory.
- Vegetable cultivation in 01 acre land and selling vegetables under welfare prices for institute workers.
- Cultivating Sunhemp in 1.5 acre for seed production.
- Supplying other services to relevant divisions according to the requirement.
- Maintenance of seedcane nursery in research farm.
- Repairing 800 m barbed wire fence around the farm.
- Continuation of compost production in compost unit in research farm.



CROP NUTRITION DIVISION

CROP NUTRITION DIVISION

Staff

Mr. HAS Weerasinghe BSc, MSc, MPhil, MI Biol.	-	Research Officer-In-charge
Mr. BR Kulasekera BSc (Agric.)	-	Research Officer
Mr. UWLM Kumarasiri BSc (Agric.)	-	Research Officer
Mr. GS Udawatte	-	Technical Officer
Ms. WAS Wijesuriya Dip (Agric.)	-	Technical Officer
Ms. MAT Tharika Dip (Agric.)	-	Technical Officer
Mr. J Gunasiri	-	Lab/Field Attendant
Mr. PWD Kulatunga	-	Lab/Field Attendant

Achievements

Research

- Fine tuning the site-specific fertilizer recommendation model for sugarcane-growing soils under four soil categories based on soil Phosphorous and Potassium concentrations.
- Identification of different properties of biochar produced from sugarcane waste material and crop residues.
- Identification of the most suitable method to produce low cost biochar from sugarcane waste material and crop residues. Further identifying the improvement in soil physicochemical characteristics with added biochar during the first three months after planting.
- Maintaining the plant crop to identify suitable combinations of organic fertilizer for sugarcane cultivation.
- Development of digitised soil parameter maps for Sevanagala and Pelwatte sugarcane growing areas.
- Production of suitable combinations of organo-mineral fertilizer pellets and maintaining of a research trial up to ratoon 1 to evaluate their performance on sugarcane cultivation.
- Maintaining the second ratoon crop research trials under rain-fed and irrigated conditions to identify the suitability of compound fertilisers for sugarcane cultivation.
- Identifying that ZnSO_4 application has improved the cane and sugar yields and it is resulted an additional income earning for sugarcane farmers and millers accordingly.
- Completion of preliminary level studies on the use of sugarcane boilers-ash as a soil amendment and its effect on soil physicochemical properties.
- Maintaining the ratoon crop of the research trial at Sevanagala under rain-fed and irrigated conditions to identify the effect of Urea and Sulphate of Ammonia fertilizers for sugarcane cultivation.
- Identifying 35 m as the most suitable UAVs flying height for the determination of sugarcane leaf nitrogen using multispectral imagery analysis.
- Development of android based smart mobile application to deliver updated sugarcane research information and expert knowledge for the sugarcane industry stakeholders in Sri Lanka.

Services

- Analysis of 2826 cane samples for brix, pol, fibre (2204 samples for Crop Improvement, 227 samples for Crop and Resource Management, 315 samples for Processing Technology, 79 samples for Crop Protection, 1 sample for Technology Transfer) and reducing sugar (48 samples for Crop Protection).
- Soil sample analysis (15) for N, P, K, pH, EC and OM (Technology Transfer division, Gal Oya plantation and Ethimale sugar Pvt Ltd)
- Sugar sample analysis (05) of Lanka Sugar Company, Sevanagala for SLSI parameters
- Compost sample analysis for SLSI parameters (05 samples- For SRI research farm and Lanka Sugar -Pelwatte).
- Carried out training programs for Sevanagala, Pelwatte, Gal Oya and Ethimale on management of sugarcane-growing soils for better cane and sugar yields.

Training Trainees

- Two students from the Technical College, Embilipitiya were trained for 6 months at the division.
- Two undergraduate students from the University of Sri Jayawardhanapura were trained for 6 months at the division.
- One undergraduate student from the Sabaragamuwa University of Sri Lanka was trained for 4 months at the division.



CROP PROTECTION DIVISION

CROP PROTECTION DIVISION

Staff

Dr. KMG Chanchala BSc (Agric.), MSc, PhD	-	Research Officer -In-Charge
Ms. VKASM Wanasinghe BSc (Sp), MSc	-	Research Officer (On study leave from November 1 st , 2020)
Ms. ANWS Thushari BSc (Sp)	-	Research Officer (On study leave up to March 1 st , 2022)
Mr. YAPK Dayasena BSc (Agric.), MSc	-	Research Officer (Resigned on March 9 th , 2022)
Mr. ALC Kodagoda (Dip in Agric)	-	Technical Officer
Ms. KP Harshani (Dip in Agric)	-	Technical Officer
Ms. RKP Jeewanthi BSc (Plantation Mgt)	-	Technical Officer
Mr. MR Premalal	-	Lab/Field Attendant
Mr. JKU Madushanka (Dip in Plantation Ext. management)	-	Lab/Field Attendant
Mr. RGS� Premathilake	-	Lab/Field Attendant

Achievements

Research

- Confirmation of that Chlorantraniliprole 0.4% (w/w) G is an effective chemical for controlling sugarcane moth borers and effective concentration is 16 kg/ha as 4 soil applications near to root zone in 55 day intervals from planting to 5½ month age of the sugarcane crop.
- Identification of two *Erianthus* accessions namely PG56 and MINDANOO having potential to use as dead end trap plants for internode borer (INB) female moths.
- Developing non chemical strategies for sugarcane pest management i.e.
 - Incorporation of dried Ipil- Ipil (*Leucenea leucocephala*) / Gandapana (*Lantana camara*) leaf to the furrows during time of planting in the rate of 40 g/m effectively manage termite damage during germination and early growth stage.
 - Ethanol extract of *Lantana camara* leaves, *Leucaena leucocephala* leaves and pods is effective in seed set dipping technique to protect seed sets from termites at early germination stage.
 - Neem seed ethanol extraction is effect over Sugarcane Woolly Aphid and *Pyrilla perpusilla* Walker management at 10% (W/V) concentration.
 - Ethanol and methanol extractions of *L. camara*, 25 g/l concentration is effective for white leaf disease (WLD) vector management.
- Giving recommendation to use pheromone traps to monitor INB population by keeping 5-6 Delta traps with pheromone lures per hectare at spindle level and replacing sticky sheets in fortnightly intervals.
- Giving recommendation to use pheromone traps to mass trapping INB population by keeping 20 Delta traps with pheromone lures per hectare at spindle level from 4th month to 11th months of the crop and replacing sticky sheets in fortnightly intervals.
- Confirming that cold soak treatment (CST) at 36 hours followed by 54 °C for 50 min hot water treatment (HWT) give good germination and significantly low level of leaf scald disease (LSD) in the plant crops.
- Identification of three different genes namely β1-3 Glucanase, Glutathione S Transferase and PR 10 to develop a molecular screening method for smut disease.

Services

- Giving recommendation to multiply 20 foreign varieties for further evaluation in Pelwatte, based on the disease incidence.
- Twenty-two varieties imported from Vietnam were released for the sugarcane germplasm.
- Seed-cane of 9 varieties and fuzz of 22 varieties imported from PR China were released to the sugarcane germplasm.
- Twenty-nine varieties imported from PR China in 2020 are being quarantined and continued regular inspections.
- Identification of pineapple disease from Hingurana area based on the symptoms and giving necessary recommendation.

Training Trainees

- Training Ms. K.S.S. Kodithuwakku and Ms. S.K.M.R. Subasinghe, students of the National Apprentice and Industrial Training Authority, Embilipitiya, for six months from 3rd January 2022 on entomological and pathological researches.
- Training Mr. W.A.S. Wanasinghe, a student of the Faculty of Technology, University of Colombo, for six month from 4th July 2022 on pathological researches.
- Supervising Ms. H.W.N.D.P. Wanasundara, a final year student of Faculty of Agriculture, Aquinas College of Higher Studies for her final year project on “Potential pesticidal plants to manage termite damage during germination and early growth face of sugarcane”.
- Supervising Ms. A.M.S.M. Sewwandika, a final year student of Sabaragamuwa university of Sri Lanka for her final year project on “Bio-efficacy of *Lantana camera* leaf extracts on white leaf disease vector; *Deltocephelus menoni*”.
- Supervising Ms. K.Y.M Somarathna, a final year student of Sabaragamuwa university of Sri Lanka for her final year project on “Effect of neem seed and leaf extracts on sap-sucking insect pests of sugarcane”.
- Supervising Ms. P.M.D.B. Weerasekara, a final year student of Sabaragamuwa university of Sri Lanka for her final year project on “Potential of using pesticidal plant extracts in managing termite damage in sugarcane buds and setts at planting”.



MECHANISATION TECHNOLOGY DIVISION

MECHANISATION TECHNOLOGY DIVISION

Staff

Mr. KHD Abeyratne BSc (Agric.), MPhil	-	Research Officer-In-Charge
Dr. KT Ariyawansa BSc (Agric.), MSc, PhD	-	Research Officer
Mr. ASMA Fernando NDT	-	Senior Technical Officer
Mr. WM Anurapala	-	Technical Officer
Mr. V Abeygunawardane	-	Welder
Mr. G Ariyaratne	-	Fitter
Mr. WA Premachandra	-	Blacksmith
Mr. DML Weerasiri	-	Mechanic
Mr. DM Weerasiri	-	Lab/Field Attendant

Achievements

Research

- Inspecting and guiding the modification of the existing hot water treatment (HWT) plant at Lanka Sugar Company Limited, Sevanagala.
- Completing the fabrication of a four-wheel tractor-mounted pellet fertilizer applicator (SRI-FX 401) and testing it in Uda Walawe and Gal Oya sugarcane fields.
- Completing 95% of construction activities of trash cutting machine (Prototype) SRI-TX 401.
- Fabricating drip pipe laying machine (SRI- IRX 401).
- Collecting 18,759 spatial data points using UAV.
- Conducting life cycle assessment (LCA) at Sevanagala and Ethimale, data analysis in progress.
- Evaluating three grab loaders at Sevanagala.
- Continuing development of IoT-integrated machinery management system.

Services

- Maintaining optimum voltage level of electric fences located at SRI farm and sugarcane nursery.
- Provision of machinery services required for research.
- Maintenance and repair of vehicles and farm equipment of SRI.
- Upgrading and maintaining SRI website.



PROCESSING TECHNOLOGY DIVISION

PROCESSING TECHNOLOGY DIVISION

Staff

Ms. SMTA Maralanda BSc (Agric), MSc	-	Research Officer-In-Charge
Ms. MGGN Sewwandi BSc (Eng)	-	Research Officer
Ms. MARI Perera Dip. (Agric)	-	Technical Officer
Mr. WKDS Karunaratna Dip. (Agric)	-	Technical Officer

Achievements

Research

- Development of a recipe for jaggery –incorporated chocolate production and conducting biochemical analysis for the product.
- Development of a recipe for bagasse-incorporated muffin production and conducting biochemical analysis for the product.
- Conducting large mill tests for SL 96 128, SL 00 603, SL 00 95, and SL 00 354 varieties at Pelwatte Sugar Factory and SL 00 95 variety performed best juice quality parameters among them.
- Conducting large mill test at the sugar factory in Ethimale Plantation (Pvt) Ltd for analysing the variety performances of SL 96 128 variety.
- Designing and drawings of semi-automated agitator and jaggery pans for the semi-automated agitation system for jaggery production.
- Isolating nitrogen fixing and phosphorus solubilising bacteria from the soil and root samples collected from Sevanagala sugarcane cultivated fields.
- Analyzing post-harvest deterioration of varieties SL 96 128 and SL 98 2524 based on the months of February and July.

Services

- Conducting a training programme on sugarcane processing and by-products for students of Ruhuna, Sri Jayawardenapura and Wayamba Universities, and National Institute of Plantation Management.
- Conducting a training programme on jaggery manufacturing process for jaggery producers and investors from Kotiyaagoda, Matara, and Siyabalanduwa.
- Conducting microbial analysis of the bio fertiliser produced by the Crop Nutrition Division.
- Producing 2402 kg of jaggery from the cane harvested at field trials.
- Producing different shapes of jaggery, different flavoured jaggery, sugarcane juice beverage and sugarcane syrup for exhibition purposes.

Training Trainees

- Training Ms. W.W.S.S. Sadamini, a student of Uva Wellassa University for three months from 28th September 2022 on sugarcane by-product processing research.
- Training Ms. W.N.L. Jayamali, a student of the Faculty of Agriculture, Rajarata University for three months from 21st November 2022 on sugarcane by-product processing research.



ECONOMICS BIOMETRY AND INFORMATION TECHNOLOGY DIVISION

ECONOMICS BIOMETRY AND INFORMATION TECHNOLOGY DIVISION

Staff

Mr. KAD Kodituwakku BSc (Agric.), MAGR	-	Senior Research Officer and Head
Ms. BDSK Ariyawansha BSc (Agric.), MPhil	-	Senior Research Officer
Mr. KGSUR Bandara BSc, HNDIT, CCNA	-	Technical Officer

Achievements

Research

- Updating the costs and returns of sugarcane cultivation based on the prices of the year 2022. The average cost per hectare of cane cultivated was Rs. 625,129, Rs. 521,551, Rs. 428,285, Rs. 514,654 and Rs. 420,364 for Sevanagala irrigated and rain-fed sectors, Pelwatte, Hingurana and Ethimale respectively. The average net income from one hectare of sugarcane per year at Sevanagala was Rs 354,618 and 178,970 under irrigation and rain-fed respectively. At Pelwatte under rain-fed and Hingurana under irrigation, the net income were Rs 125,075/ha/year and 233,482/ha/year respectively and that at Ethimale under rain-fed was Rs. 106,676/ha/year.
- Estimating the commercial value of a tonne of sugarcane at Sevanagala, Pelwatte, Gal Oya and Ethimale sugar industries during the year 2021 as Rs. 22,145, Rs. 22,596, 24,046 and Rs. 24903 respectively. Accordingly, the commercial value of sugarcane produced from one hectare of land in the irrigated sector Sevanagala, rain-fed sector Pelwatte, Gal Oya and Ethimale 2021 were Rs. 2.2 million, 1.1 million, 1.6 million and 1.2 million respectively, and it was much higher than the income of competitive crops.
- Estimating the quantity and the value of sugar imports during year 2021 was 582,000 tonne and Rs. 56 billion respectively.
- Estimating the cost of application of Zinc sulphate at Uda Walawe research farm as Rs. 5550/ha and gain for farmer and miller was Rs. 26,000/ha and Rs. 504,900/ha respectively.

Services

- Re-designing the web site of SRI hosted under URL of www.sugarres.lk/ and updating it as and when required.
- Collecting articles and sending to referees for corrections to publish the fourth issue of the “Sugarcane Sri Lanka” journal.
- Providing the following biometry related services to other divisions of SRI:
 - i. Analysis of RYT and PYT data of the crop improvement program and
 - ii. Data tabulation of stage iii, RYT and PYT data of the crop improvement program, maturity testing data of CRM and analysis of data received from CP, CN, and PT divisions.
 - iii. Data analysis of plant and ratoon crops of the study on evaluation of the efficacy of a granular insecticide; Chlorantraniliprole 0.4% (w/w) for the management of borer pests of sugarcane in Sri Lanka -CP division.
 - iv. Evaluation of the large mill performance of SL 2000 series varieties at Pelwatte sugar factory.
 - v. Comprehensive evaluation of SL 2000 series varieties based on factory performance, maturity, and adaptability.

- Provide necessary guidance and support for conducting, data analysis and report writing of following projects:
 - i. Evaluation of the suitability of compound fertilisers for sugarcane cultivation in Sri Lanka.
 - ii. Selection of new set of standard varieties for smut screening trials.
 - iii. Study on pollen viability and seed germination CI division.
- Implementation of IT activities within the institute.
- Preparing the INFORM database of SRI for the year 2020 for the Sri Lanka Council for Agricultural Research Policy.
- Prepare the data base for National Review of the Status of Science and Technology in Sri Lanka for year 2019 and 2020 – NASTEC.
- Prepare database for National Research & Development Survey 2020 – NSF.
- Training five students from National Apprentice and Industrial Training Authority (NAITA) on the use of computer software packages for a period of six months.



TECHNOLOGY TRANSFER AND DEVELOPMENT DIVISION

TECHNOLOGY TRANSFER AND DEVELOPMENT DIVISION

Staff

Mr. DPW Pottawela BSc (Agric.), PG. Dip. (BA)	-	Technology Transfer Officer In-Charge
Mr. RAPA Ranatunga Dip. (Agric.)	-	Development Officer (up to 11 th April 2022)
Mr. WGMS Weragoda BSc (Agric.), MSc	-	Development Officer
Mr. MKPC Gunawardene BSc (Agric.), MSc	-	Development Officer
Mr. AP Karunathilaka BSc (Agric.)	-	Development Officer
Mr. ANMBR Prabath BSc (Agric.)	-	Development Officer
Mr. BPGS Sandanayake Dip. (Agric.)	-	Senior Technical Officer
Mr. G Somaweera	-	Management Assistant

Achievements

Technology Transfer / Development Activities

- In the year 2022, the TTD division conducted/coordinated 13 training/awareness program on sugarcane cultivation and related subject areas for the sugar industry personnel. A total of 454 persons have participated for these. In addition, on the request of various stakeholders of SRI, the division conducted 21 trainings, awareness programs. A total of 1061 personnel (students, entrepreneurs) have participated for them.
- Establishing and maintaining 42 field demonstration sites on intercropping with sugarcane in such sugar mill areas as Pelwatte, Siyambanduwa, Sevanagala, and Hingurana.
- Three observational fields were established and maintained on organic sugarcane farming at SRI research farm, Galoya, and Ethimala sugar companies in 2021 in compliance with the revised research program of SRI on organic sugarcane farming. The observations were obtained and awareness programs for agricultural staff of sugar companies and farmers have been conducted in 2022.
- Continuing SRI TTD *eSMS* service for transfer extension messages between researchers, extension officers and farmers in the sugarcane sector. Continuing the sharing of sugar industry information through the SRI FB page and updating SRI website. In addition, publishing two volumes of SRI Newsletter (*Puwath Hasuna* of SRI) and two annual report for the year 2020 and, completing the report for 2021 were done.

In the training programs/demonstrations for farmers, field officers and students, and in the development programs, the prioritized technological aspects/subject areas and activities covered were;

Promotion of technologies on sugarcane farming systems, processing, and by-products utilization

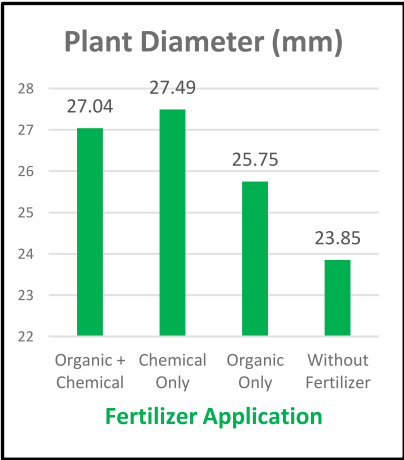
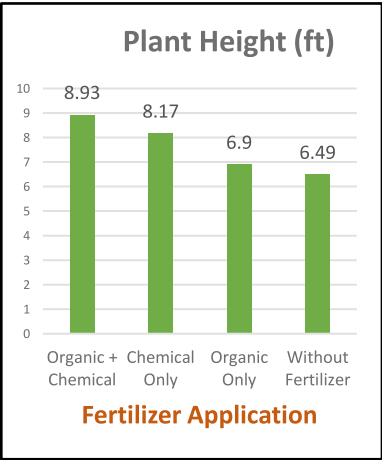
- Establishment and maintenance of approximately 4.5 ha of demonstration / multiplication plots of newly recommended sugarcane varieties (SL 00 95, SL 00 354, SL 00 603, SL 00652) at SRI's Research Farm. Harvest of these plots were provided to sugar companies for further multiplication
- Conducted results demonstrations for farmers and officers at each industry areas to make aware the new varieties.

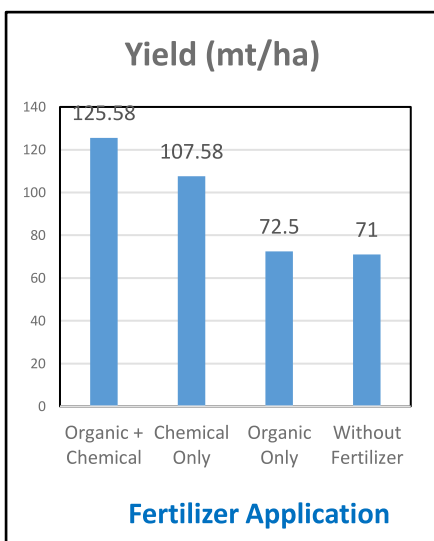
- Conducted 40 farmers / fields visits (10 – Pelwatte/Monaragala, 14 at Siyambalanduwa / Ethimale, 16 at Hingurana)
- Conducted farmers/field visits (64 Nos.) at Ethimale, Siyambalanduwa, Pelwatte, and Hingurana.
- Required seeds (Mung bean, cowpea, groundnuts) were given to 42 selected farmers at Ethimale, (15), Sevanagala (24), and Hingurana (3) Hingurana to establish demonstration/multiplication plots of intercropping with sugarcane. The field demonstrations will be conducted using those intercropped fields.
- Observations were made on the trials established to get an idea on organic sugarcane farming at SRI research farm as well as Ethimale and Galoya sugar industry field. The results of the trial at Uda Walawe could be stated as below.

Hon. State Minister was Explained the Observational Field on Organic Sugarcane Farming at SRI’s Research Farm



Observations Made





According to the above illustrations, the lowest values recorded in terms of plant height, plant diameter and YPH under no fertilizer condition. A remarkable increasing trend of those values can be seen with the application of chemical fertilisers. In addition, it can be observed that there are no considerable differences in the measured values between the conditions of no fertilisers and application of organic fertilisers only. With these observations, it can be stated that the application of inorganic fertilisers is needed to get the potentials of the sugarcane cultivations.

- Conducted two officer and farmer evaluation programs on foreign varieties established by CI division at Lanka Sugar Company – Pelwatte. The collected information was handed over to EBIT division for analysis.

Training/Awareness Program Conducted/Coordinated by TTD Division

SRI Originated Programs



Date	Program/subject areas covered	To whom	No. of Participants	Venue
11 January	Training on sugarcane jaggery and syrup production	Entrepreneurs	03	SRI
26 January	Training on sugarcane jaggery and syrup production	Farmers and Officers attached to the Divisional Secretariat, Nagoda, Galle	95	DS, Nagoda, Galle
27 January	Foreign variety evaluation	Farmers and Officers of LSC - Pelwatte	50	LSC - Pelwatte
07 March	Awareness program on <i>Uk Gammuna</i> project, sugarcane cultivation and jaggery and syrup production	Selected farmers at Kalyanipura and Sapumalthenna, in Welioya, Mulathew	38	Divisional Secretariat, Welioya, Sampathnuwara
15 March	Field/result demonstration on organic sugarcane farming	Agricultural staff of LSC - Sevanagala	18	Research farm, SRI
30 March	Training on sugarcane cultivation, jaggery and syrup production	Selected farmers at Kalyanipura and Sapumalthenna, in Welioya, Mulathew	52	SRI
31 March	Training on cane varieties, pest and disease mgt., soil nutrients management, and cane quality improvement	Agric. Assistants of LSC - Sevanagala	16	SRI
26 April	Workshop on Extension Communication, and adult Education	Officers of Quality Assurance section of LSC - Pelwatte	30	LSC - Pelwatte
18 October	Awareness program on soil nutrients management and mobile APP on sugarcane	Officers of Ethimale Plantations (Pvt) Ltd.	42	ASC - Siyambalanduwa
19 October	Awareness program on soil nutrients management and mobile APP on sugarcane	Officers of Galoya Plantations (Pvt) Ltd.	35	Hingurana

26 October	Field day on weedicide application and WLD control	Selected officers and farmers of EPL - Ethimale	15	Ethimale
28 December	Evaluation of varieties – 2003 series	Famers and Officers of LSC - Sevanagala	28	LSC - Sevanagala
29 December	Evaluation of Varieties – 2004 series	Famers and Officers of LSC - Sevanagala	32	LSC - Sevanagala
No. of Programs - 13		No. of Participants - 454		

Note: In conducting these training/awareness/demonstrations and SRI visits, the assistance of the relevant division was obtained whenever necessary.

Development of cottage-level sugar industry (Badulla district)

- Conducted 13 field visits at Baduulla district and provided necessary instructions for the improvement of cottage-level sugar industries in the area.
- The office of the Development Officer previously established at Agrarian service Centre, Passara was shifted to Haliela.

Sugarcane Nursery Development (Kantale)

- Maintained about 6 ha of previously established multiplication nurseries (Continued)
- Established and maintaining of 4ha of nursery of the variety SL 98 2524.
- Established 10.7 ha of nursery with new and old varieties – SL 71 30, SL 98 2524, Co 775, SL 00 95, SL 00 354, SL 00 603, SL 04 624, and SL 00 652).
- 108t of harvested cane was sold to Watawala Plantations (Pvt) Ltd, for the use as animal feed.

Sugarcane Nursery Development (Sevanagala, Pelwatte, Ethimale, and Hingurana)

- Established and maintained 4.5 ha of nurseries with the varieties of SL 00 95, SL 00 354, SL 00 603, SL 00 652 and SL 92 5588 at SRI's research farm.
- Provided seedcane to Galoya Plantations (Pvt.) Ltd. 7 tons of SL 00 354 for multiplication purposes.
- The Ethimale Sugar Company was provided 10 tons of Seedcane (SL 00 95 – 5t, – 5 t, SL 00 652 – 5t, and SL 96 128 – 8t) for multiplication purposes.
- Provided seedcane of new sugarcane varieties to Ethimale Plantations Ltd. SL 00 354 (2 ton), SL 00 652 (1.5 ton), SL 00 603 (2 ton) to establish nurseries for further multiplication.
- 5tons of seedcane of SL 88 116 was provided to LSC (Sevanagala) for multiplication purposes.

Information and Promotion Centre (I&PC) – Colombo

- I & PC was equipped with necessary infrastructure facilities.
- Maps of sugarcane growing areas especially the Moneragala, Ampara districts and potential areas map were displayed.
- Sugar related products, which were produced by SRI, were kept at the centre for demonstration purposes.

Requested Programs by the Stakeholders, and other Programs

- Published SRI Newsletter Vol. 10-2 and Vol. 10-3
- Printed the annual reports of SRI for the years 2020 and 2021 and they are to be tabled in the Parliament of Sri Lanka.
- Technical instructions were provided to Ridiyagama, NLDB farm to establish and maintain 2 ac sugarcane nursery.
- Updating SRI web site and Facebook page at will be continuing.
- Continued the e-SMS service of SRI to disseminate the sugarcane technologies and SRI information to staff of sugar companies.
- Continued the sharing of sugar industry information though the SRI FB page.

Training/Awareness Program Conducted/Coordinated by TTD Division

Demanded Programs by Stakeholders



Date	Program/Subject Areas Covered	To whom	No. of Participants	Venue
15 February	Training program on sugarcane agronomic practices including, soil fertility management, and cane quality improvement	A team of students of Agro-Technology & Rural Development, University of Colombo	126	Research farm - SRI
26 May	Training program on sugarcane cultivation and processing including cane quality improvement including jaggery and syrup production	A team of students of Faculty of Agriculture, University of Ruhuna	150	SRI
05-09 June	A five-day online training on all aspects of sugarcane cultivation and processing	A team of students who are following National Diploma in Plantation Management at National Institute of Plantation Management	22	online
09 June	Training program on sugarcane cultivation and processing including cane quality improvement including jaggery and syrup production	Students of Agricultural Assistance Program, Moneragala	34	Technical College, Moneragala
02 August	Training on Laboratory analysis of Soil, cane, and leaf samples	Agricultural staff of Lanka Sugar Company - Sevanagala	15	SRI
04 August	Training on Mechanization of Sugarcane farming. Technical details of tractors and implements included.	Tractor operators of Lanka Sugar Company - Sevanagala	45	LSC - Sevanagala
24 August	Training program on Sugarcane agronomic practices and jaggery and syrup production.	Entrepreneurs from Polonnaruwa area	05	SRI
31 August	Training on Mechanization of Sugarcane farming. Technical details of tractors and implements included.	Tractor operators of Lanka Sugar Company - Sevanagala	21	SRI
11 October	Training of soil nutrients management	Agricultural staff of Lanka Sugar Company - Sevanagala	20	SRI
11 October	Practical session on WLD vector identification and its prevention methods.	Agricultural staff of Lanka Sugar Company - Sevanagala	15	SRI
17 October	Training on soil fertility management, and farm mechanization	Agricultural staff of Lanka Sugar Company - Sevanagala	35	LSC - Sevanagala
21 October	Two-day training on Sugarcane cultivation and processing	A team of students of NIPM	31	SRI

03 November	Training on sugarcane cultivation and processing	A team of students of M/Palatuwa Guarantee MMV, Matara.	100	SRI
11 November	A training on Sugarcane Varieties, Pest and Disease management, and mechanization technology	A team of students from Faculty of Agro Technology and Rural Development, University of Colombo	180	SRI
22 November	A training on Sugarcane Varieties, Pest and Disease management, and mechanization technology	A team of students of faculty of Technology, University of Sri Jayewardenepura.	42	SRI
01 December	Training of sugar processing and mechanization	A team of A/L students of G/Elpitiya Ananda Central College, Elpitiya	45	SRI
16 December	A training on sugarcane cultivation and processing	A team of students of University of Sri Jayewardenepura	49	SRI
16 December	SRI visit	A team of students of R/Ellawala MV, Ratnapura	45	SRI
21 December	Training on Sugarcane cultivation and processing	A team of students of k/M/CWW Kannangara MMV	80	SRI
21 December	Training on Plant Tissue Culture	A team of students of University of Sri Jayewardenepura	26	SRI
22 December	Training on Plant Tissue Culture	A team of students of R/Kahangama MV	115	SRI
No. of Programs - 21		No. of Participants – 1061		

Note: In conducting these training/awareness/demonstrations and SRI visits, the assistance of the relevant division was obtained whenever necessary.

PUBLICATIONS AND AWARDS

Publications

- Chanchala, K.M.G., Hemachandra, K.S., Nugaliyadde, L., Witharama, W.R.G., Wanasinghe, V.K.A.S.M. and Kiriella, S.H., 2022. Role of leaf fibro-vascular bundle configuration on feeding of *Deltocephalus menoni* (Hemiptera: Cicadellidae) in the transmission of White Leaf Disease in sugarcane varieties. *Journal of Agricultural Sciences – Sri Lanka*, 17(1), pp.198–199. DOI: <http://doi.org/10.4038/jas.v17i1.9619>
- Chanchala K.M.G., Dayasena Y.A.P.K., Wanasinghe, V.K.A.S.M., Hemachandra, K.S., Nugaliyadde, L., and Witharama, W.R.G. (2022). Disease transmission proficiency of *Deltocephalus menoni* (Hemiptera: Cicadellidae); vector of sugarcane white leaf disease. *Agrica*. 11(1), Page. 54-60 [http://doi.org/ \(1\) 10.5958/2394-448X.2022.00005.0](http://doi.org/10.5958/2394-448X.2022.00005.0)
- Chanchala, K.M.G., Hemachandra, K.S., Nugaliyadde, L., Wanasinghe, V.K.A.S.M., Kiriella, S.H. and Witharama, W.R.G. (2022). Effect of the Leaf Trichome Types, Density and Length on Selected Behavioural and Physiological Characteristics of *Deltocephalus menoni* (Hemiptera: Cicadellidae); Vector of Sugarcane White Leaf Disease. *Proceedings of the International Symposium on Agriculture and Environment 2022*. Faculty of Agriculture, University of Ruhuna. Pg: 14
- Chanchala, K.M.G., Dayasena, Y.A.P.K., Wanasinghe, V.K.A.S.M., Hemachandra, K.S., Nugaliyadde, L. and Witharama W.R.G. (2022). Disease transmission proficiency of *Deltocephalus menoni* (Hemiptera: Cicadellidae); vector of sugarcane white leaf disease *Proceedings of the International Symposium on Agriculture and Environment 2022*. Faculty of Agriculture, University of Ruhuna. Pg: 18
- Dayasena, Y.A.P.K. and Niranjana, M. (2022). Conventional PCR based semi-quantitative method for quantification of sugarcane white leaf disease phytoplasma *Proceedings of the International Symposium on Agriculture and Environment 2022*. Faculty of Agriculture, University of Ruhuna. Pg: 30
- De Silva, A.L.C., De Costa, W.A.J.M., Suriyagoda, L.D.B., 2022. Effects of Elevated Temperature and CO₂ on Biomass and Sucrose Accumulation of Selected Sugarcane Genotypes. *Tropical Agricultural Research*, 33(1): 67-79. DOI: <http://doi.org/10.4038/tar.v33i1.8536>
- Kulasekara, B.R., Maralanda, A., Weerasinghe, H.A.S. and Kumarasiri, U.W.L.M. (2022). Isolation of Indigenous Soil Microbes and evaluation of storage effects to develop a viable soil-microbial inoculum. *22nd World Congress of Soil Science - Glasgow 2022-July*.
- Kulasekara, B.R., Ariyawansa, B.D.S.K., Weerasinghe, H.A.S. and Kumarasiri, U.W.L.M. (2022). Effect of ZnSO₄ on Cane Quality of the Variety SL 96 128, under Alfisols at Uda Walawe Sri Lanka. *International Symposium on Agriculture and Environment (ISAE 2022-May)* Faculty of Agriculture, University of Ruhuna, Sri Lanka.
- Narmilan, A., Gonzalez, F., Salgado, A.S.A., Kumarasiri, U.W.L.M., Weerasinghe, H.A.S., Kulasekara, B.R. (2022). Predicting Canopy Chlorophyll Content in Sugarcane Crops Using Machine Learning Algorithms and Spectral Vegetation Indices Derived from UAV Multispectral Imagery. *Remote Sensing*. 14(5):1140. <https://doi.org/10.3390/rs14051140>.

- Perera A. M. M. S., Attanayaka D. P. S. T. G. and Wijesuriya A. (2022). Characterization of exotic parental clones of sugarcane (*Saccharum* spp. hybrid) by SSR markers. Wayamba University Research Congress - 2022, Wayamba University of Sri Lanka, Kuliyaipitiya. pp. 25-26.
- Perera, A.M.M.S., Wijesuriya, A., Sumedha Thushari, A.N.W., Attanayaka, D.P.S.T.G. and Wijesuriya, W.B. (2022). Evaluation and Characterization of *Saccharum* Germplasm for Sugarcane Breeding in Sri Lanka PGIA congress - 2022.
- Perera, A.M.M.S., Wijesuriya, A., Sumedha Thushari, A.N.W. and Wijesuriya, B.W. (2022). Unveiling indigenous pure *Saccharum officinarum* cultivars for manufacturing organic raw cane sugars. National online research symposium, NRC of Sri Lanka.
- Perera, A.M.M.S. (2022). Sugarcane is a rich germplasm: why not exploit it properly in producing improved cultivars. Hanthana Essence.
- Thushari, A.N.W.S., and De Costa, D.M. (2022). Morphological and biochemical indices for selecting sugarcane varieties resistant to smut disease. Proceedings of the International Symposium on Agriculture and Environment 2022. pg 42
- Thushari, A.N.W.S., and De Costa, D.M. (2022). Management of Sugarcane Smut Disease using Triazole Fungicides and Synthetic Elicitors. Tropical Agricultural Research, 33(2): 213-222. DOI: <http://doi.org/10.4038/tar.v33i2.8554>
- Thushari, A.N.W.S., and De Costa, D.M. (2022). Molecular variability and genetic relationships of *Sporisorium scitamineum* isolates, the causal organism of sugarcane smut disease of Sri Lanka. Proceedings of the International Symposium on Agriculture and Environment 2022. pg 55
- Wanasinghe V.K.A.S.M., Chanchala K.M.G., Nikpay A., Goebel F.R. (2022). Biological Control of Sugarcane Pests in Sri Lanka: Current Status and Future Prospects. Agrica. 11(1), Page.83-90 <http://doi.org/10.5958/2394-448X.2022.00009.8>
- Weerasinghe, H.A.S., Gunaratne, G.P., Jayakody, A.N. and Dharmakeerthi, R.S. (2022). Micronutrient Status in Commercial Sugarcane-growing Alfisols at Sevanagala, Sri Lanka. Tropical Agricultural Research. 33(3):271–279. DOI: <http://doi.org/10.4038/tar.v33i3.8571>.
- Wijayawardhana, L.M.J.R., Weerasinghe, K.D.N., Navaratne, C.M. (2022). Normalized Difference Vegetation Index (NDVI) Associated with Plant Height and Leaf Area Index of Sugarcane (*Saccharum* spp. Hybrid), in: International Symposium on Agriculture and Environment (ISAE). Faculty of Agriculture, University of Ruhuna, Sri Lanka. <https://doi.org/10.16285/j.rsm.2007.10.006>
- Wijayawardhana, L.M.J.R., Navaratne, C.M., Weerasinghe, K.D.N., Siridewa, A., Senavirathna, A.W.K.G.C. (2022). Dry spell characteristics in Sevanagala, Sri Lanka and its impact on sugarcane cultivation, in: 10th YSF SYMPOSIUM. National science and technology commission, Sri Lanka, p. 297.

**ADMINISTRATION
AND
FINANCE DIVISION**

Administration and Finance Division

Staff

Dr. MS Perera BSc (Agric), MPhil, PhD	-	Director/Chief Executive Officer
Ms. ANP Perera	-	Deputy Director (Administration)
MBA, BBA, CIMA Adv. Dip MA, MIPC, CBA		

Administration Section

Mr. PKN Priyadarshana B.Sc.(Adm), CBA, MBM	-	Assistant Director (Administration)
Dr. C Eritawala PhD	-	Administrative Officer
Mr. KRN Nandasena	-	Development Officer
Ms. JKH Jayasekara	-	Development Officer
Ms. TMK Senadeera	-	Snr. Mgt. Assistant (Clerical & Typing)
Ms. MMIMK Manikkadawara	-	Mgt. Assistant (Clerical & Typing)
Ms. MAR Samarasekara	-	Mgt. Assistant (Clerical & Typing)
Ms. OU Subasinghe	-	Mgt. Assistant (Clerical & Typing)
Mr. WAS Madhushanka	-	Mgt. Assistant (Clerical & Typing)
Ms. AK Rathnayake	-	Telephone Operator/ Receptionist
Mr. JPSP Karunathilaka	-	Driver
Mr. TPK Jayarathna	-	Driver
Mr. HSA Susantha Kumara	-	Driver
Mr. GWMPs Manawadu	-	Driver
Mr. AM Wijayarathna Banda	-	Driver
Mr. WMAK Priyashantha	-	Driver
Mr. KD Manjula Abeysiri	-	Driver
Mr. HMASK Herth	-	Driver

Maintenance Unit

Mr. GSK Dahanayake B.Sc.	-	Works Superintendent
Ms. DHS Wijesinghe	-	Inspector of Works
Mr. G Gamage	-	Electrician
Mr. RP Kulathunga	-	Carpenter
Mr. HP Chandrawansa	-	Water Pump Operator
Mr. KH Weeraratne	-	Water Pump Operator

Accounts Section

Ms. DMJN Dissanayake B.Com., MBS	-	Accountant
Mr. IB Kodagoda BSc	-	Accounting Officer
Mr. WCJ Wanigarathna	-	Development Officer
Ms. PAR Chathurani	-	Development Officer
Ms. THGDM Dayarathna	-	Development Officer
Mr. GMS Nandadeva	-	Snr.Mgt. Assistant (Accounts)
Ms. AK Amarakoon	-	Snr. Mgt. Assistant (Accounts)
Ms. TS Weerasinghe	-	Mgt. Assistant (Accounts)

Procurement Unit

Mr. AGUS De Silva HNDA	-	Procurement Officer
Mr. BBAR Beruwala	-	Development Officer
Ms. Sanoja Damayanthi	-	Development Officer
Mr. T Ranjith Peiris	-	Management Assistant (Accounts)

Store

Mr. RGS Niroshana - Store Keeper

Internal Audit Unit

Mr. IJ Paranagamage HNDA - Internal Auditor
Mr. DMP Nickson - Snr. Mgt. Assistant (Accounts)

Summary of the activities carried out during the year 2022

- Preparation of budget, annual accounts and progress reports.
- Carrying out day-to-day administration, personnel management, maintenance and welfare activities and staff training according to the requirements of the research and development activities of the Institute.

STAFF STRENGTHENING AND MOTIVATION

Staff turnover during the year 2022

Retirements

Mr. RA Premachandra	-	Senior Technical Officer	2022.01.29
Mr. KG Chandrarathna	-	General Worker	2022.03.09
Mr. RAPA Ranathunga	-	Development Officer	2022.04.11
Mr. JA Lalith Roaha	-	Worker	2022.07.23
Mr. GMS Nandadewa	-	Snr. Mgt. Assistant (Accounts)	2022.12.31
Mr. WM Anurapala	-	Technical Officer	2022.12.31
Mr. I Pathmasiri	-	Worker	2022.12.31
Mr. WM Jothipala	-	Worker	2022.12.31
Mr. AKS Rathnayake	-	General Worker (Office)	2022.12.31
Mr. W Podimahathmaya	-	Worker	2022.12.31

Resignations

Mr. YAPK Dayasena	-	Research Officer	2022.03.07
Ms. RDARR Ranathunga	-	Research Officer	2022.04.28
Ms. ALC Kumari	-	Senior Technical Officer	2022.06.01
Mr. HA Dharmadasa	-	General Worker	2022.12.05
Mr. DWS Chinthana	-	Carpenter	2022.12.01

Staff Training

Training Programs/Workshops/Seminars Attended (Local)

- Mr. I. B. Kodagoda (Accounting Officer) participated the workshop on Preparation and Maintain of the Fixed Asset Register conducted by Skill Development Fund on 03.03.2022.
- Mr. W. C. J. Wanigarathna (Development Officer) participated the workshop on Preparation of Final Accounts at Skill Development Fund on 10.03.2022 to 11.03.2022.

- Mr. A. G. U. S. De Silva (Procurement Officer) participated the workshop on How to prepare Procurement Plan at Skill Development Fund on 14.03.200 to 15.03.2022
- Ms. A. M. M. S. Perera (Senior Research Officer) participated the workshop on Managerial Skills Development at Skill Development Fund on 21.03.2022 and 22.03.2022
- Ms. A. M. M. S. Perera (Senior Research Officer) participated the workshop on Leaders for Tomorrow at Skill Development Fund on 24.03.2022 and 25.03.2022
- Ms. O. U. Subasinghe (Management Assistant) and Ms. A. K. Rathnayaka (Receptionist/Telephone Operator) participated the on line Certificate Course in English Language at Skill Development Fund from 72 hours from 25.03.2022.
- Ms. D. M. J. N. Dissanayake (Accountant) participated the workshop on Accounting procedures to be maintained in office at National Plantation Management Institute on 14.07.2022
- Ms. Nidarshani Perera [Deputy Director (Admin)] and Mr. P. K. N. Priyadarshana [Assistant Director (Admin.)] participated the online workshop on Disciplinary Procedure & Conducting Disciplinary Inquiries at The Ceylon National Chamber Industries on 20.09.2022.
- Mr. K. R. N. Nandasena (Development Officer) participated the training programme on Transport Management at Skill Development Fund on 15.09.2022 and 16.09.2022
- Ms. O. N. S. Weeraratna (Development Officer) participated the workshop on Telephone Skills & Etiquette Training for Secretaries & Front Office Staff at Skill Development Fund on 19.09.2022 and 20.09.2022
- Ms. A. K. Rathnayaka (Receptionist/Telephone Operator) participated the on line workshop on Duties and Responsibilities of Leave Clerks at Skill Development Fund from 72 hours from 25.03.2022.
- Mr. P. K. N. Priyadarshana [Assistant Director(Admin.)] participated the online workshop on Significant Recent Changes to Labour Laws at The Ceylon National Chamber Industries on
- at Skill Development Fund
- Mr. W. C. J. Wanigarathna, Mr. K. R. N. Nandasena, Mr. B. B. R. Beruwala (Development Officers)” Mr. A. L. Kodagoda (Technical Officer) and Mr. W. A. S. Madhushanka (Management Assistant) participated the Tamil Language training programme from 10.11.2022.
- Ms. O. U. Subasinghe (Management Assistant) participated the on line workshop Career Development of Development Assistant Officers and Management Assistant Officers at Skill Development Fund on 01.12.2022 and 02.12.2022
- Mr. I. B. Kodagoda (Accounting Officer) participated the IT Course in Computerized Accounting conducted AAT Business School on 06.12.2022.

Staff Training

Long-Term Training (Foreign)

1. Mr. K. P. Wickramasinghe (Research Officer) participated an one year training programme of Study on flowering controllable of sugarcane breeding parents at Yunnan Agriculture Science Academy from 25.10.2022

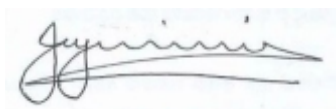
Long-Term Training (Local)

1. Mr. A. P. Karunathilaka (Development Officer) continued his M.Sc. Degree in Development Communication and Extension at the Post Graduate Institute of Agriculture, University of Peradeniya.
2. Mr. L. M. J. R. Wijayawardena (Research Officer) continued his PhD in Water Management at University of Ruhuna.
3. Mrs. A. N. W. Sumedha Thushari (Research Officer) continued her PhD in Molecular and Applied Microbiology at the University of Peradeniya.
4. Mrs. V. K. A. S. M. Wanasinghe (Research Officer) continued her PhD in Plant Protection at University of Peradeniya.

Audit and Management Committee Report 2022

The audit activities of the year 2022 have been carried out according to the internal audit plan and 04 audit and management committee meetings have been held during this year, one per quarter. In those audit and management committee meetings, the deficiencies pointed out by the National Audit Office in the form of audit queries, as well as the audit queries by the internal audit department, the deficiencies pointed out in the reports and the necessary guidance to correct the relevant deficiencies and the expected goals of the institution. Moving towards, performing and giving guidance, forwarding the reports of the audit and management committee meetings to the governing body, where by further discussing the matters, obtaining the necessary advice for the formal maintenance of the administrative, accounting and other departments of the organization. By giving, it has been possible to carry out the work of the institution in a formal manner.

In addition to this, in accordance with the established internal control system of the institution, the financial regulations, the institution code and the circulars issued by the government from time to time, to maintain the activities of the institution and to provide the necessary information for the board of governors to make decisions and fulfil the tasks of the corporate audit and management committee during the relevant period.



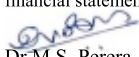
Indike Paranagama
Internal Auditor
Sugarcane Research Institute
Udawalawa

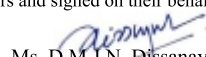
AUDITED FINANCIAL STATEMENTS

Sugarcane Research Institute
STATEMENT OF FINANCIAL POSITION

To Date: 31-Dec-2022	Note	2022	2021
ASSETS			
Non-current assets			
Property, Plant and Equipment(Schedule 01)	1	574,908,280.11	257,837,467.93
Investment	2	69,276,486.89	68,065,031.85
	-	644,184,767.00	325,902,499.78
Current assets			
Consumables stock	-	34,805,111.35	30,999,884.73
Fixed Assets stock	-	11,371,142.05	4,378,198.14
Livestock	-	-	-
Advance payment for opening Letters of Credit	-	-	-
Work in progress	-	-	-
Trade and other receivables	3	54,249,416.37	44,321,244.37
Prepayments & other deposits	4	764,475.00	863,975.00
Cash and cash equivalents	5	49,333,614.84	55,492,087.35
		150,523,759.61	136,055,389.59
Total assets	-	794,708,526.61	461,957,889.37
LIABILITIES			
Current liabilities Payable	6	13,854,595.35	21,800,032.72
Accrued expenses	7	22,776,079.06	16,831,420.09
Suspense	-	-	-
Creditor control account	-	-	-
	-	36,630,674.41	38,631,452.81
Non - current liabilities			
Differed income	-	-	-
Provision for medical (Schedule 08)	-	9,095,070.19	14,415,972.79
Provision for audit fee	-	1,000,000.00	1,000,000.00
Provision for gratuity (Schedule 09)	8	76,734,415.00	80,137,895.00
Provision for Doubtful Debts	-	803,980.24	614,902.98
Provision for contingent liability	-	-	-
Advance Receipts	8.1	1,894,000.00	-
	-	89,527,465.43	96,168,770.77
Total liabilities	-	126,158,139.84	134,800,223.58
Total Net Assets	-	668,550,386.77	327,157,665.79
Share capital Account (Accumulated Fund)	-	193,156,497.18	166,428,273.69
Surplus / (Deficit) for the period	-	(11,259,995.95)	25,400,282.79
Reserve -Retain Earnings	-	181,896,501.23	191,828,556.48
Revaluation reserve	-	486,653,885.54	135,329,109.31
Total Net Assets/Equity	-	668,550,386.77	327,157,665.79

The governing body of the entity is responsible for the preparation and presentation of its financial statements and which should also contain a statement of responsibility. The accounting policies on pages 2 to 5 and notes on the pages 14 to 16 from an integral part of these financial statements. The Board of Governors is responsible for preparation and presentation of these financial statements. These financial statements were approved by the Board of Governors and signed on their behalf:

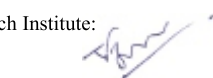

Dr.M.S. Perera
Director/ Chief Executive Officer


Ms. D.M.J.N. Dissanayake
Accountant

On behalf of the Board of Governors of Sugarcane Research Institute:


Mr. Tissa Sunil Ratwatte
Chairman of the Board


Mr. R.C. Watawala
Member of the Board


Ms. H.G.V.K.T Gunawardena
Member of the Board

Sugarcane Research Institute
STATEMENT OF FINANCIAL PERFORMANCE

From Date: **01-Jan-2022**

To Date: **31-Dec-2022**

	Note	2022	2021
Operating Revenue			
Treasury Fund			
Capital	-	11,500,000.00	55,800,000.00
Recurrent	-	251,030,000.00	269,900,000.00
Treasury Grant for Ministry Project	-	-	-
Cess on local sugar production	-	8,978,686.00	8,672,280.00
Other income	9	22,707,144.48	11,848,436.48
	-	294,215,830.48	346,220,716.48
Operating Expenses			
Personnel emoluments	10	198,278,050.64	206,594,767.59
Travelling & Subsistence	-	995,616.31	1,293,932.17
Foreign visits		-	-
Supplies and consumables	1	5,942,484.54	5,843,812.10
Maintenance	12	21,701,474.97	15,647,986.66
Contractual services	13	34,614,155.02	33,294,022.76
Research & development	14	2,303,418.21	12,459,540.43
Depreciation and amortization expenses	-	39,792,007.15	42,822,340.57
Other operating expenses	15	1,611,384.65	2,492,838.12
Doubtful Debts	-	189,077.26	325,083.29
Total operating expenses	-	305,427,668.75	320,774,323.69
Surplus / (Deficit) from operating activities	-	-11,211,838.27	25,446,392.79
Finance cost	-	48,157.68	46,110.00
Total non-operating revenue (expenses)		-11,259,995.95	25,400,282.79
Net surplus / (Deficit)before extraordinary items	-	-	-
Net surplus / (Deficit) for the period	-	-11,259,995.95	25,400,282.79

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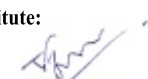

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Member of the Board


Ms. H.G.V.K.T Gunawardena
Member of the Board

Statement of Changes in Equity in Net Assets for the Year Ended 31st December 2022

Description	Accumulated Fund	Revaluation Reserve	Retained Earnings/(Translation Reserve)	Total (Rs.)
Balance as at 1st January 2022		135,329,109.31	191,828,556.48	327,157,665.79
Prior-Year adjustment (Additional Note 1.1)			1,327,940.70	1,327,940.70
Surplus/(Deficit) for the Period			(11,259,995.95)	(11,259,995.95)
Revaluation Surplus/(Deficit) for the Period		351,324,776.23	-	351,324,776.23
Balance as at 31st December 2022		486,653,885.54	181,896,501.23	668,550,386.77

SUGARCANE RESEARCH INSTITUTE
CASH FLOW STATEMENT FOR THE YEAR 2022

CASH FLOW FROM OPERATING ACTIVITIES

	Rs.
Surplus/(Deficit)	(12,021,379.95)
Depreciation	39,792,007.15
Prior year adjustment	(1,327,940.70)
Increase in doubtful debts	189,077.26
Decrease in payables	(7,945,437.37)
Decrease in assets	(2,120,000.00)
Increase in accrued expenses	5,944,658.97
Decrease in provisions of Medical	(5,320,902.60)
Decrease in provisions of Gratuity	(3,403,480.00)
Increase in advance receipts	1,894,000.00
Increase in other current assets	(10,798,170.53)
Decrease in prepayments and other deposits	99,500.00
Increase in trade and other receivables	(9,928,172.00)
Net cash flows from operating activities	(4,946,239.77)

CASH FLOW FROM INVESTING ACTIVITIES

Investment of gratuity FDs	(1,211,455.04)
Net cash flows from investing activities	(1,211,455.04)

CASH FLOW FROM FINANCEING ACTIVITIES

Proceeds from borrowings	-
Repayment from borrowings	-
Net cash flows from financing activities	-
Net increase/ decrease in cash and cash equivalents	(6,157,694.81)
Cash and cash equivalents at beginning of period	55,492,087.35
Cash and cash equivalents at the end of period	49,334,392.54

Additional Notes

1.1 Prior-year adjustment – 2022

The previous year adjustment consists of following

	Rs.
Adjustment of receivable bond (Mr.L.P.Wirthamulla)	284,820.34
Adjustment of creditor A/C (2600-40/2600-31/2600-47/2600-34)	585,150.38
Removal of medical balance of retired employees-2022	457,969.98
Total	1,327,940.70

1.2. Cess on local sugar production

Cess on local sugar production has been added to 2022 final accounts on accrual basis. The receivable amounts of the local cess amount from the local sugar production as at 31.12.2022 indicated in the below table.

Description					
	Total	Pelwatte	Sevanagala	Gal Oya	Ethimale
Balance as at 01.01.2022	8,155,555.00	3,041,310.00	1,779,605.00	2,242,895.00	1,091,745.00
Amount to be received on the production in 2022	7,886,941.00	2,411,025.00	1,262,800.00	2,856,710.00	1,356,406.00
	16,042,496.00	5,452,335.00	3,042,405.00	5,099,605.00	2,448,151.00
Cash received in 2022	6,308,555.00	1,194,310.00	1,779,605.00	2,242,895.00	1,091,745.00
Balance as at 31.12.2022	9,733,941.00	4,258,025.00	1,262,800.00	2,856,710.00	1,356,406.00

1.3. Loan to Kantale Sugar Industry

The receipt of the loan to Kantale sugar industry Ltd Rs: 1,000,000.00 is doubtful. It has been conveyed to the line ministry for further actions.

1.4. Fixed Deposit

Fixed deposit stated at their cost value and Treasury bills are stating at their net realizable value. Investment has identified in the investment category in the statement of financial position.

1.4. Revaluation of assets

Land, Building and vehicles were re-valued as at 01.01.2022 by the Department of valuation on the basis of current market value for continuation of the existing use. It has planned to conduct a revaluation of the other assets categories of the institute within the year 2023.

1.4.1 Depreciation on Re- Valued Assets

Depreciation charge on revalued assets of the institute as at 1st January 2022 has been charged as per the SLAS 18 and IAS 16, its permits to transfer the amounts equals to excess depreciation from the revaluation surplus to retained earnings.

1.5 Income analysis from General Treasury

			Rs.Mn
Source	Approved	Received	To be received
Recurrent	268.00	251.03	16.97
Capital	30.00	11.50	18.50
Total	298.00	262.53	35.47

1.5.1. Government Capital Grants

Grants received from the General Treasury of the Government of Sri Lanka were recognized as capital income category of the Income statement until the year 2022.

However, Government grants utilized to acquire assets that will be spent in subsequent period will be recognized as deferred income from the year 2023. (SLAS 24 and IAS 20 standards will take in to the financial statements from the year 2023 Government grants)

Sugarcane Research Institute

NOTES TO STATEMENT OF FINANCIAL POSITION

To Date: **31-Dec-2022**

	Note	2022	2021
02 Investment			
2401 - Gratuity Investment A/C		64,436,186.89	62,910,331.85
2520 - Scholarship Fund A/C			500,000.00
2521 - Treasury Bill Deposit A/C		4,840,300.00	4,654,700.00
Investment	-	69,276,486.89	68,065,031.85
03 Trade and other receivables			
2540 - Staff Loan:Book Loan (Schedule 05)		1,750.00	1,750.00
2542 - Advance:Local Purchase Advance		2,487,371.89	4,171,492.39
2544 - Advance:Special Advance		296,383.33	656,433.33
2572 - Receivable:Amendment Charges		191,961.00	191,961.00
2573 - Receivable:Fixed Deposit Interest		6,355,349.94	1,184,943.32
2575 - Receivable:Treasury Bill Interest Recei.		534,123.84	25,398.90
2576 - Sundry Debtors : Lanka Sugar company (pvt) -		5,735,219.90	6,013,854.65
2578 - Staff Loan:Distress Loan (Schedule 03)		23,494,864.64	20,133,034.46
2579 - Staff Loan:Festival Advance (Schedule 04)		3,750.00	10,000.00
2580 - Staff Loan:Housing Loan (Schedule 02)		3,972,570.14	4,572,264.31
2581 - Staff Loan:Motor Cycle Loan (Schedule 06)		621,294.53	1,075,907.01
2584 - Sundry Debtors:Ethimale Plantation (Pvt) Ltd		1,356,406.00	
2585 - Sundry Debtors:Galoya Plantation (Pvt) Ltd		2,856,710.00	2,242,895.00
2586 - Sundry Debtors:Kanthale Suagr Indusrty (Pvt)L		1,000,000.00	1,000,000.00
2587 - Sundry Debtors : Lanka Sugar company (pvt) -		4,258,025.00	3,041,310.00
2592 - Receivable-Bond (Mr.L.P.Wirthamulla)		209,820.34	
2593 - Receivable-Fuel Advance (Ceylon Petroleum C		571.82	
2594 - Sundry Debtor: Watawala Dairy (Pvt) Ltd		873,244.00	
Trade and other receivables	-	54,249,416.37	44,321,244.37
04 Premaiments and Other Deposits			
2560 - Deposit:C.B.Ellepola		2,500.00	2,500.00
2561 - Deposit:Ceylon Oxygen Ltd			144,000.00
2562 - Deposit:Electricity Board		394,600.00	350,100.00
2563 - Deposit:Embilipitiya M.P.C.S.Ltd		155,000.00	155,000.00
2564 - Deposit:For Gas Cylinder		118,375.00	118,375.00
2565 - Deposit:Kanthale Multi-Purpose Co-Operation		90,000.00	90,000.00
2566 - Deposit:M.T.N.Net Work		2,500.00	2,500.00
2568 - Deposit:Soflogic Information		1,500.00	1,500.00
Premaiments and Other Deposits	-	764,475.00	863,975.00
05 Cash and cash equivalents			
2503 - Peoples Bank-Savings A/C-Udawalawe		13,419,143.16	14,431,271.49
2505 - Petty Cash Control A/C-Colombo			20,000.00
2507 - Petty Cash Control A/C-Hanthana		5,000.00	
2511 - Bank Of Ceylon - Baththaramulla		2,967,342.79	1,410,797.45
2514 - Peoples Bank - Baththaramulla		3,298,043.51	1,605,511.66

2515 - Peoples Bank - Udawalawe	28,705,813.63	37,275,029.78
2516 - People's Bank-Loan A/C - Udawalawe	888,271.75	699,476.97
2517 - Petty Cash Control A/C-Procurement (Udawala	25,000.00	25,000.00
2518 - Petty Cash Control A/C - Kanthale	25,000.00	25,000.00
Cash and cash equivalents	- 49,333,614.84	55,492,087.35
06 Payable		
2651 - Bid Bond	91,900.00	111,900.00
2653 - Contractual Bond	25,000.00	25,000.00
2600-15 - Creditor: Sarathchandra Home Centre		26,850.00
2600-24 - Creditor:Microtech Biological (Pvt) Ltd	1,043,180.00	
2600-28 - Creditor: Genius Associates(PVT)Ltd		107,350.00
2600-29 - Creditor: GIS Solution(Private)Limited		493,200.00
2600-30 - Creditor: Grae Lanka Agro		402,500.00
2600-31 - Creditor: Indrajith Construction		1,825,364.92
2600-32 - Creditor: John Piper International(PVT)Ltd		2,966,052.00
2600-33 - Creditor: Metropolitan Technologies(PVT)L	1,635,000.00	1,692,400.00
2600-34 - Creditor: Microchip Solution		19,762.20
2600-35 - Creditor: Nandha atrac Motors(PVT)Ltd		344,050.00
2600-36 - Creditor: Ningbo Marketing Company		444,960.00
2600-37 - Creditor: Royal Ceramics Lanka PLC	565,093.80	758,410.44
2600-38 - Creditor: S & D Associate	414,480.00	109,425.60
2600-39 - Creditor: Scientific Instruments(PVT)Ltd	1,000,500.00	278,208.00
2600-40 - Creditor: Scion Electronics		75,900.00
2600-41 - Creditor: Singer Plus		1,188,995.50
2600-42 - Creditor: Singer Sri Lanka PLC		13,999.00
2600-43 - Creditor: SMS Holdings(PVT)Ltd		824,567.69
2600-44 - Creditor: Steel Tec Industry		560,952.00
2600-45 - Creditor: Technovators(PVT)Ltd		145,800.00
2600-46 - Creditor: Tudawe Trading Co.(PVT)Ltd		24,900.00
2600-47 - Creditor: W.A.Construction		2,997,175.00
2600-48 - Creditor: Abans PLC	649,990.00	
2600-49 - Creditor: Pointe Scientific Instrumentation	1,301,140.00	
2600-50 - Creditor: Techno Instrument (Pvt) Ltd	146,500.00	
2602 - Creditor:Analytical Instrument (Pvt) Ltd	4,501,595.16	951,048.00
2605 - Creditor:Avon Pharmo Chem(Pvt)Ltd	701,700.15	86,175.00
2606 - Creditor:Bhoomi Tech (Pvt) Ltd		285,768.00
2607 - Creditor:Brown & Company PLC	196,650.00	
2609 - Creditor:D.R.Industries(Pvt) Ltd		573,303.75
2614 - Creditor:Libra Agency	200,882.00	1,045,656.00
2618 - Creditor: Chandra Stores	100,850.00	
2619 - Retention (Schedule 07)	773,997.71	1,336,570.59
2623 - Creditor:State Timber Ceylon	506,136.53	506,136.53
2625 - Creditor:U.G.Stores		139,720.00
2629 - Creditor:Wickrama Hardware Stores		1,437,932.50
Payable	- 13,854,595.35	21,800,032.72
07 Accrued Expenses		
2632 - Accrued Account	22,776,554.06	16,831,445.09
2638-1 - Stamp Duty A/C	-475.00	-25.00
	- 22,776,079.06	16,831,420.09

Accrued Expenses

08 Provision For Gratuity		
2634 - Provision for Gratuity (Schedule 09)	76,734,415.00	80,137,895.00

Provision For Gratuity	-	76,734,415.00	80,137,895.00
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8.1 Advance Receipts

2902 - CIC Agri Businesses (Project YARA) Fund	972,000.00	
2905 - Indo-Sri Lanka Joint Research Programme	922,000.00	

Advance Receipts	-	1,894,000.00	-
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Sugarcane Research Institute

NOTES TO STATEMENT OF FINANCIAL PERFORMANCE

From Date: **01-Jan-2022**
To Date: **31-Dec-2022**

	Note	2022	2021
09 Other income			
0100 - Other Sources	-	-	-
0101 - Fixed Deposit Interest Income	-	7,752,807.00	3,604,817.89
0102 - Treasury Bill Interest Income	-	694,403.58	226,412.31
0103 - Saving Account Interest Income	-	401,579.73	342,351.28
0104 - Staff Loans Interest Income	-	1,102,366.32	1,186,441.75
0105 - PHD Bond	-	-	-
0106 - Fine Income	-	137,219.05	25,466.87
0107 - Transport Income	-	107,009.84	91,677.15
0121 - Sale of Jaggery Income		548,380.00	224,490.00
0122 - Sale of seedcane & factory cane Income		3,433,578.75	2,415,653.50
0123 - Sale of Sugarcane Income		95,525.00	
0108 - Sundry Income		697,562.25	2,289,248.23
0112 - Gratuity Over Provision Income		3,403,480.00	1,441,877.50
0113 - Medical Over Provision Income		4,333,232.96	
Total Other income	-	22,707,144.48	11,848,436.48
10 Personnel emoluments			
1001 - Salaries ,Wages and Holiday Payments EPF/ET		138,212,526.56	127,777,002.39
1002 - Staff Overtime Expenses		10,895,034.43	12,649,648.49
1004 - Other Allowances (Personnel) Expenses		628,000.00	664,750.00
1005 - Retirement Benefits - Gratuity Expenses		5,294,790.00	6,826,090.00
1006 - Contribution to Employees Provident fund & c		34,945,430.10	39,908,438.51
1501 - Welfare Programs Expenses		8,302,269.55	18,768,838.20
Total Personnel emoluments	-	198,278,050.64	206,594,767.59
11 Supplies and consumables			
1201 - Stationery and Office Requisites Expenses		1,430,655.93	1,452,523.76
1204 - Medical Supplies Expenses			22,949.86
1207 - Other Expenses (Supplies)		3,128,888.21	2,746,219.78
1703 - Printing, Translation & Media publicity, Newsp	-	1,382,940.40	1,622,118.70
Total Supplies and consumables	-	5,942,484.54	5,843,812.10
12 Maintenance			
1301 - Vehicles Maintenances Expenses		6,796,811.77	3,023,482.01
1302 - Plant, Machinery & Equipment (Maintenance e		3,197,422.84	5,013,062.08
1303 - Buildings and Structures Expenses		166,041.63	26,856.12
1202 - Fuel and Lubricants Expenses		10,749,431.27	6,565,972.92
1504 - License, Fitness and Insurance Expenses	-	791,767.46	1,018,613.53
Total Maintenance	-	21,701,474.97	15,647,986.66

13 Contractual services

1402 - Postal & Communication Expenses	2,544,166.61	3,335,221.49
1403 - Electricity & Water Expenses	6,946,823.14	6,388,080.51
1404 - Rents and Local Taxes Expenses	344,118.96	414,806.00
1405 - Security Charges (Expenses)	23,316,287.77	21,671,483.48
1407 - Legal Fee and Charges (Expenses)	40,964.00	5,000.00
1410 - Other Expenses (Services)	938,579.48	169,142.86
1411 - Contractual Services Expenses	28,929.41	
1203 - Diets & Uniforms (Accommodation food and l	119,480.00	100,060.00
1505 - Workman and Death Compensation Expenses	117,374.33	969,075.92
1509 - Other Expenses (Transfers)	- 217,431.32	241,152.50

Total Contractual services	- 34,614,155.02	33,294,022.76
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14 Research & development

1205 - Research Materials Expenses	764,057.70	10,771,520.68
1702 - Irrigation and Land preparation Expenses		299,495.00
1704 - Harvesting Expenses	680,211.25	683,977.70
1705 - Research Review Expenses	198,517.00	
1706 - Other Expenses (Miscellaneous Expenses)	183,541.51	301,776.40
1503 - Sugar Sector Development Activities	477,090.75	402,770.65
Expenses 1507 - Symposium Expenses	- -	-

Total Research & development	- 2,303,418.21	12,459,540.43
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15 Other operating expenses

1401 - Transport Expenses	168,267.65	84,600.00
1701 - Scholarships Expenses	22,000.00	267,750.00
1406 - Accounts, Audit and board of survey Expenses	868,307.00	1,328,638.00
1408 - Board of Governor's Expenses	377,110.00	444,493.87
1506 - Staff Training and Development & Resource pe	- 175,300.00	366,856.25
1510 - Stamp Duty Expenses	400.00	500.00

Total Other operating expenses	- 1,611,384.65	2,492,838.12
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Schedule : 1

Property, Plant and Equipment

Description	Cost (Rs.)		Depreciation (Rs.)			N.D.V *Carrying value (Rs.) 31.12.2022
	Balance / Revaluation as at 01.01.2022	Addition / Removal	Balance As at 31.12.2022	Balance as at 01.01.2022	Depreciation for the year	
Office equipment	25,702,349.11	-	25,702,349.11	13,489,498.63	3,640,627.93	8,572,222.55
Furniture fittings	21,845,393.69	203,059.76	22,048,453.45	14,442,553.41	3,290,283.81	4,315,616.23
Computer equipment	15,881,065.80	509,487.00	16,390,552.80	10,421,532.67	3,267,500.18	2,701,519.95
Laboratory equipment	115,902,285.33	-	115,902,285.33	84,157,614.73	17,233,030.46	14,511,640.14
Agricultural equipment	27,751,612.95	5,149,863.76	32,901,476.71	13,774,456.28	3,805,671.94	14,638,278.49
Field equipment	19,657,897.46	(1,324,760.00)	18,333,137.46	11,566,856.12	2,648,179.12	4,118,102.22
Workshop equipment	17,230,931.02	1,192,700.58	18,423,631.60	12,695,326.12	2,700,510.99	3,027,794.49
Other equipment	7,021,429.70	(192,308.00)	6,829,121.70	6,554,582.44	274,539.26	0.00
Bicycle	96,700.00	-	96,700.00	93,750.00	2,950.00	-
Motor vehicles	3,042,400.00	106,125,000.00	109,167,400.00	609,126.30	760,600.00	81,266,423.70
Computer software	2,377,763.92	-	2,377,763.92	989,326.37	237,776.39	1,150,661.16
Lands - Hantana	65,000.00	6,335,000.00	6,400,000.00	-	-	6,400,000.00
Buildings	34,293,909.04	427,003,640.96	461,297,550.00	4,055,590.96	1,917,475.00	434,177,081.54
Library books	128,620.66	-	128,620.66	86,818.95	12,862.07	28,939.64
TOTAL	290,997,358.68	545,001,684.06	835,999,042.74	172,937,032.98	39,792,007.15	574,908,280.11

Depreciation Rates

Office equipment	15%	Bicycle	15%
Furniture fittings	15%	Motor vehicles	25%
Computer equipment	20%	Computer software	10%
Laboratory equipment	15%	Lands	0%
Agricultural equipment	15%	Buildings	5%
Field equipment	15%	Library books	10%
Workshop equipment	15%	Infrastructure development	5%
Other equipment	15%		

Note: 1.**Revaluation**

Land, Building and vehicles were re-valued as at 01.01.2022 by the Department of valuation on the basis of current market value for continuation of the existing use.

2. Depreciation on Re- Valued Assets

Depreciation charge on revalued assets of the institute as at 1st January 2022 has been charged as per the SLAS 18 and IAS 16, its permits to transfer the amounts equals to excess depreciation from the revaluation surplus to retained earnings.

Revalued Assets		Depreciation - 2022	Carrying Value (31.12.2022) NDV)
Motor Vehicles	109,167,400	26,531,250.00	82,636,150.00
Buildings	461,297,550	21,147,402.50	440,150,147.50
Agriculture Equipment	32,901,476.71	683,070.00	32,218,406.71
			555,004,704.21

AUDITOR GENERAL'S REPORT

National Audit Office

MY No: SPCG/HM/C/SRI/01/2022/02 Your No.:
Date : 22.05.2023

Chairman,
Sugar Cane Research Institute

Auditors report as per section 12 of the National Audit Act No. 19 of 2018 regarding the Financial Statements, Other statutory and regulation requirements for the year ended 31 December 2022 of Sugar Cane Institute.

Relevant report and audited financial statement had been sent herewith.

Signed by
W.P.C. Wickramasinghe
Auditor General

Copies:

1. Secretary, Ministry of Plantation Industries
2. Secretary, State Ministry of Finance, Economic Stabilization and National Policies.

National Audit Office

MY No: SPCG/HM/C/SRI/01/2022/02

Your No.:

Date: 22.05.2023

Chairman,
Sugar Cane Research Institute.

Auditors report as per section 12 of the National Audit Act No. 19 of 2018 regarding the Financial Statements, Other statutory and regulation requirements for the year ended 31 December 2022 of Sugar Cane Institute.

1. Financial Statement

1.1 Opinion for the Audit

The audit of the financial statements of the Sugarcane Research Institute for the year ended 31 December 2022 comprising the statement of financial position as at 31 December 2022 and the statement of financial performance ,statement of changes in equity and cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with provisions of the National Audit Act No. 19 of 2018 and Finance Act No. 38 of 1971. My comments and observations which I consider should be report to Parliament appear in this report.

In my Adverse opinion, the accompanying financial statements do not reflect a true and fair view of the financial position of the Sugarcane Research Institute as at 31 December 2022, and of its financial performance and its cash flows for the year then ended in do not accordance with Sri Lanka Public Sector Accounting Standards.

1.2 Basis for Adverse Opinion

- (a) The annual depreciation expenses of Rs.48,361,772 was calculated on the basis of the revaluation amount of buildings, automobiles and agricultural equipment as on the beginning date of the year. And particular annual depreciation expenses was written off by the revaluation reserve account, therefore annual deficiency and balance of the revaluation reserve account had been shown undervalue amount of Rs. 48, 361,772.
- (b) In 13th October 2022, to complete the requirement of glyphosate in plantation field, as a grant, by Sri Lanka Customs was provided 17,000 liters it had been cost of Rs. 9,445,866. This value had not recorded in accounts. Therefore it has been increase annual deficiency from that amount
- (c) Based on the purchase order, During the year, purchasing fix assets the cost of Rs. 10,110,967 were allocated as provisions of Creditors. Because of this allocation, As on 31st December of the year under review Inventory and creditor account balance were over value by that equivalent value
- (d) As cess amount Rs. 1,091,745 had been received from the Ethimale Sugar (Pvt) Ltd during the year under review for the next year entered in the current year and deficit for the year have decreased by that amount.
- (e) During the year gratuity expenditure incurred in cash as Rs.5,294,790, and it had been accounted as the related expenditure for the year. While provision for gratuity account has been overvalued in Rs.3,403,480 on the end of day in last year and that amount and the adjustments were made through the statement of financial performance of the year under review , the deficit for the year was understated by that amount.
- (f) As an amount of Rs. 342,754 received as insurance claim had been entered under motor vehicle repair account and motor repair expenses and insurance claim receipt account were understated.
- (g) When calculating the Cash generated from operating activities in the cash flow statement Operating loss of Rs. 11,259,996 to be matched during the year under review and that amount had been entered as Rs.

12,021,380. Due to this the net amount generated from operating activities had be shown understated by Rs. 761,384

- (h) Net cash flow generated from operating activities in the statement of cash flows, Although no adjustments were made for interest income of Rs.8,848,790. And therefore net cash flow generated from operating activities was overvaluing at par and net cash flow generated from investment activities was undervalue.
- (i) According to the balance of financial statement on December 31 of the year under review, the cost of property, plant and equipment and the accumulated depreciation were Rs.835,999,043 and Rs.212,729,040 respectively, but according to the ledger, the balance were display as Rs.619,365,005 and Rs.44,456,544 respectively. The difference were observed as Rs.216, 634,038 and Rs.168,272,496 respectively.
- (j) An amount Rs. 1,847,000 included in the balance of Rs. 4,258,025 shown in the financial Statement as cess to be received from Pelewatta division as at 31 December 2022 which was received for Sugarcane research Institute during the period 2013 -2015 for the utilization of Lanka Sugar Company had been shown as repair expenses for motor vehicle and had been resettled as cess payable. No required entries had not been made in the books.
- (k) An information of value deduction in assets of Rs. 2,120,000 was shown under operating activities in the cash flow statement and that was not submitted to the audit.

I conducted my audit in accordance with Sri Lanka Auditing Standards (SLAuSs). My responsibilities, under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

1.3 Other information included in the annual report of the Sugar Research Institute

Information which had been included in the annual report of the Sugar Research Institute for the year 2022 which expects to submit the after this

audit report date but not included in the financial statement and relevant report on my audit are means as other information. Management is responsible for the other information.

My opinion regarding the financial statements does not cover other information and I will not provide any certification or opinion in this regards.

When reading the Annual report of the Sugar Research Institute for the year 2022, If I decided that there were sufficient wrong disclosures, those factors should have been forwarded to the party whom administers the affairs of the institute for corrections. If further wrongs were appear without corrections, those will be included in the report which has to be table in the Parliament in the due cause as per section 154 (6) of the constitution.

1.4 Responsibilities of the management and governing parties regarding the financial statement.

Preparing and presenting this financial Statement according to the accounting standards of the Sri Lankan government sector and make a decision for an internal control system enabling to prepare a financial statement without presenting sufficient false statements and fraudulent manner presenting in the fair manner are the responsibilities of the management.

When preparing financial Statements, ability to make decisions to continue the Institution is one of the responsibility of the management and unless if the management intends to close the firm or if the management works out to stop the firm when an alternative is not available, keeping accounts based on long continuation of the firm and disclosing the relevant factors for continue the firm are responsibilities of the management.

Governing body of the Institution is responsibility regarding the financial reporting of the Institution.

As per sub section 16 (1) of National Audit act no. 19 of 2018, proper books and accounts on the income, expenses, assets and liabilities should be maintained enabling to prepare annual and periodical financial report of Sugarcane Research Institute.

1.5 Responsibility of Auditor regarding the audit of the financial statement

In a whole, providing a fair certification without sufficient error presentation arise due to fraud and errors and issuing an audit report including my opinion are my objectives. Although the fair certification is considered a higher certification, but, when performing audit as per audit standards, that is always, will not reflect a fair certification. Due to the effect of fraud and errors alone and collectively may create sufficient error statements, it will depend on the influence over the economic decision made by the reviewers in it's nature of inadequateness.

I performed the audit with justification and professional way when doing the audit as a part of the audit as per Sri Lanka auditing standards. Furthermore;

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
- Conclude on the appropriateness of the management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Institute's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to

draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Institute to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Important findings, main internal control discrepancies and other factors identified through my audit had been conveyed to the director's body.

2. Report on other legal and regulatory requirements.

- 2.1 Special provision had been included regarding the following requirements in the national audit act no 19 of 2018.
- 2.1.1 As per the requirements mentioned in the section 12 (a) of national Audit act no 19 of 2018, except the effect from the factors described in the part, the base for the opinion in my report, all the information and disclosures had been obtained by me and as per my observation, I confirm that there had been a proper accounting system in the firm.
- 2.1.2 As per the requirement mentioned section 6 (1) (d) (iii) of the national audit act no 19 of 2018, presented financial statement had been agreed with the previous year
- 2.1.3 As per the requirement mentioned section 6 (1) (d) (iv) of the national act no 19 of 2018, except the observation disclosure on para 1.2(a) (v) and (xiii) my observation made for the next year had been included. in the financial statements presented.

2.2 As per the procedures followed and evidences obtained and within the limitation of the sufficient factors, nothing had been come across to my observation as mentioned below.

2.2.1 As per the requirement mentioned in the section, 12 (d) of the national audit act no 19 of 2018, as there was a connection apart from the general business of the firm directly or indirectly in regarding to a agreement in connection with the firm by any member of the director board.

2.2.2 As per the requirement mentioned in the section, 12 (f) of the national audit act no 19 of 2018, except below mentioned observation, firm had been functioned as not per the certain written law or other common or special regulation issued by the director board of the firm.

Rules / Regulations

Observation

(a) Government Accounting guideline no 22/05 of 13 December 2022	Even though the financial Statement to be submitted to the the Auditor General on or before 28 th February 2023 it had been submitted to the Audit on 09 th March 2023 with delay of 8 days during the year under review
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2.2.3 As per the requirement mentioned in the section, 12 (g) of the national audit act no 19 of 2018, institution had functioned not as per the powers, authorities and duties.

2.2.4 As per the requirement mentioned in the section, 12 (h) of the national audit act no 19 of 2018, institution had not procured and used as per the rules and regulation within the timeline as economically, effectively and productively.

Signed by

W.P.C. Wicramaratne
Auditor General

ANALYSIS OF FINANCIAL TRENDS

Rs.

FINANCIAL POSITION											
DESCRIPTION	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
ASSETS											
Non current assets	311,179,618.41	310,195,099.91	486,400,124.78	568,403,182.03	511,556,304.02	467,380,271.12	428,937,695.76	459,331,930.31	461,957,889.37	793,947,142.61	
Current assets	104,385,759.44	99,626,631.89	263,576,057.92	255,143,450.98	267,629,949.92	259,789,157.15	258,116,964.06	322,767,425.04	325,902,499.78	643,423,383.00	
	206,793,858.97	210,568,468.02	222,824,066.86	313,259,731.05	243,926,354.10	207,591,113.97	170,820,731.70	136,564,505.27	136,055,389.59	150,523,759.61	
LIABILITIES AND EQUITY											
Liabilities	311,179,618.41	310,195,099.91	486,400,124.78	568,403,182.03	511,556,304.02	467,380,271.12	428,937,695.76	459,331,930.31	461,957,889.37	793,947,142.61	
Current liabilities	63,485,188.86	65,938,532.17	75,918,537.61	65,810,532.38	88,652,259.16	91,161,402.48	101,901,304.88	157,726,071.05	134,800,223.58	126,158,139.84	
Non-current liabilities	23,767,588.78	15,941,012.87	9,019,359.99	11,031,001.23	24,369,380.45	13,990,091.86	17,045,732.61	60,550,620.94	38,631,452.81	36,630,674.41	
	39,717,600.08	49,997,519.30	66,899,177.62	54,779,531.15	64,282,878.71	77,171,310.62	84,855,572.27	97,175,450.11	96,168,770.77	89,527,465.43	
Net Assets / Net Equity	247,694,429.55	244,256,567.74	410,481,587.17	502,592,644.03	422,904,044.86	376,218,859.51	327,036,390.88	301,605,859.26	327,157,665.79	667,789,002.77	
FINANCIAL PERFORMANCE											
DESCRIPTION	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
OPERATING REVENUE											
Treasury income	164,234,191.56	234,193,878.46	355,768,941.80	389,475,697.14	259,992,891.63	326,780,551.75	306,757,905.88	290,081,644.98	346,220,716.48	294,215,830.48	
Cess income	-	122,800,000.00	339,084,240.74	365,000,000.00	232,830,000.00	295,394,000.00	268,257,000.00	272,970,043.27	325,700,000.00	262,530,000.48	
Other institutional income	138,295,452.50	91,820,414.50	3,238,130.00	1,437,670.00	4,484,550.00	3,418,795.00	20,232,185.00	5,488,080.00	8,672,280.00	8,978,686.00	
	25,938,739.06	19,573,463.96	13,446,571.06	23,038,027.14	22,678,341.63	27,967,756.75	18,268,720.88	11,623,521.71	11,848,436.48	22,707,144.48	
OPERATING EXPENSES											
Personal emoluments	192,907,048.71	227,363,256.95	299,278,835.49	301,161,414.14	339,395,302.99	401,937,149.08	348,342,003.92	327,974,704.93	320,774,323.69	306,189,052.75	
Other operating expenses	102,919,673.65	116,445,339.86	159,202,581.59	179,594,282.69	179,771,941.65	203,866,397.85	195,808,529.77	196,877,133.74	199,768,677.59	198,278,050.64	
Finance cost	89,987,375.06	110,917,917.09	140,076,253.90	121,567,131.45	159,516,997.22	198,006,749.23	152,533,474.15	131,097,571.19	121,005,646.10	107,911,002.11	
	202,276.48	49,785.33	51,832.49	115,492.84	106,364.12	64,002.00	46,767.06	43,010.00	46,110.00	48,157.68	
Net surplus/deficit	(28,875,133.63)	6,780,836.18	56,438,273.82	88,198,790.16	(79,402,411.36)	(75,156,597.33)	(41,630,865.10)	(37,936,069.95)	25,400,282.79	(11,973,222.27)	