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வருடாந்த அறிக்கை
ANNUAL REPORT

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இலங்கைத் தேசிய பொறியியல் ஆராய்ச்சி மற்றும் அபிவிருத்தி நிலையம்
NATIONAL ENGINEERING RESEARCH AND DEVELOPMENT CENTRE OF SRI LANKA

අධ්‍යාපන අමාත්‍යාංශය
கல்வி அமைச்சு
Ministry of Education

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01.

Acts, Legislation & Corporate Governance

National Engineering Research And Development Centre of Sri Lanka (NERDC) was established in 1974 in accordance with the provisions of the State Industrial Corporations Act No. 49 of 1957 and now it is functioning under the purview of the Ministry of Education. NERDC is one of the premier institute established under the aforesaid Act with the primary objective of promoting and facilitating the Development of Domestic Engineering and Technological Research Industry. The Centre is instituted at Industrial Estate, Ekala, Ja-Ela.



OFFICIAL ADDRESS

2P/17 B, Industrial Estate
Ekala, Ja-Ela
Sri Lanka



CONTACT NUMBERS

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+ 94-011-2236384
+ 94-011-2236307
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BANKERS



↗ Bank of Ceylon, Ja-Ela
↗ Bank of Ceylon, Corporate
Branch

AUDITORS



Auditor General
Auditor General's Department



02. Vision, Mission, Objectives and Corporate Values

Vision

"To be a
Centre of Excellence,
in Engineering Research
and Development
in the
South Asia Region"

PURPOSE

"To provide
Engineering Intervention
for
Socio Economic Development
in Sri Lanka"



MISSION

"Engage in Research and Development activities
to develop, acquire, adapt & transfer Engineering
Technologies that would have a direct impact on
the Socio Economic Development of Sri Lanka,
while creating a culture within the organization
to harness innovation and creativity of
employee sand stakeholders"

OBJECTIVES

As per the Industrial Corporation Act No. 49 of 1957, the following purposes for which the industrial undertaking is constituted shall be;

1. To provide for the institutional mechanism needed for the progressive development of indigenous technology by encouraging, recognizing and developing innovative and creative talent in Sri Lanka.
2. To provide facilities to co-ordinate the technological, engineering and research capabilities of various public and private sector industries and institutions in a productive manner through co-operative endeavour.
3. To ensure by adoption and adaptation the choice of technologies that would be consistent with the country's resource endowments and national planning objectives.
4. To examine direct and indirect mechanism of technology transfer and offer counsel to appropriate government and private institutions in Sri Lanka, when required to do so.
5. To promote the optimal exploitation of the country's human and material resources, particularly labour and raw material resources by promoting the growth of suitable technology.
6. To design, manufacture, and test prototype machinery, pilot plants as demanded by Industrial, commercial and other end users in an economical manner.
7. To provide for continuous monitoring of technological data and documentation relating to engineering designs and research through the co-operation of international and national agencies.
8. To offer sustained consultancy services to public and private sector enterprise and undertake research and promote training activities to broaden the base of the country's engineering and industrial design and research capabilities.
9. To make provision for purpose connected with engineering, research and development related to matters aforesaid.

COOPERATE VALUES

We as NERDC team are dedicated to the delivery of quality products, technologies and services for contributing to the wellbeing of our nation. We believe that high ethical standards are essential to achieve our individual and corporate goals. As such, a high performance culture necessitate to achieve excellence in Engineering Research and Development, the core values of NERDC commitment to our team, customers, other stakeholders and community are;





03.

Board of Directors and Organization Structure

CHAIRMAN

Prof. S U Adikary

BSc.Eng.(Hons.), MSc, PhD, C.Eng., MIESL
(from 03/11/2022)

Prof. Leelananda Rajapaksha

PhD, MEng, BScEng., E Eng, FIMechE, MASHRAE, MIIAR, MIESL
(up to 02/11/2022)

Mr. K A S S K Perera

MBA, PGDip, BA(Hons)
(from 03/11/2022)

Eng. Kapila Dodamgoda

MA Economics, FCMA, Fellow CMA (Ans),
CGMA, B.Sc Eng., AMIESL, MCIM, MSLIM
(from 03/11/2022)

Mrs. HMDNK Wataliyadda

Msc
(from 30/09/2022)

Mr. J Yogaraja

B.Sc (Special in Computer Science),
Post Graduate in (Advanced IT) Japan
(from 30/09/2022)

Mr. S Prasad Jayamanne

M.Sc. in Computer Science - Reading
M.Sc. in Applied Electronics
B.Eng. (Hons) in Mechatronics
B.Sc in Applied Science
(from 30/09/2022)

Mr. M H B Sarath Kumara

BA (Hons) Economics,
MSSC (Economics),
PG Dip in (Environ & Regi. Dev.)
(from 30/09/2022)

Mr. S A D Thilak Premalal

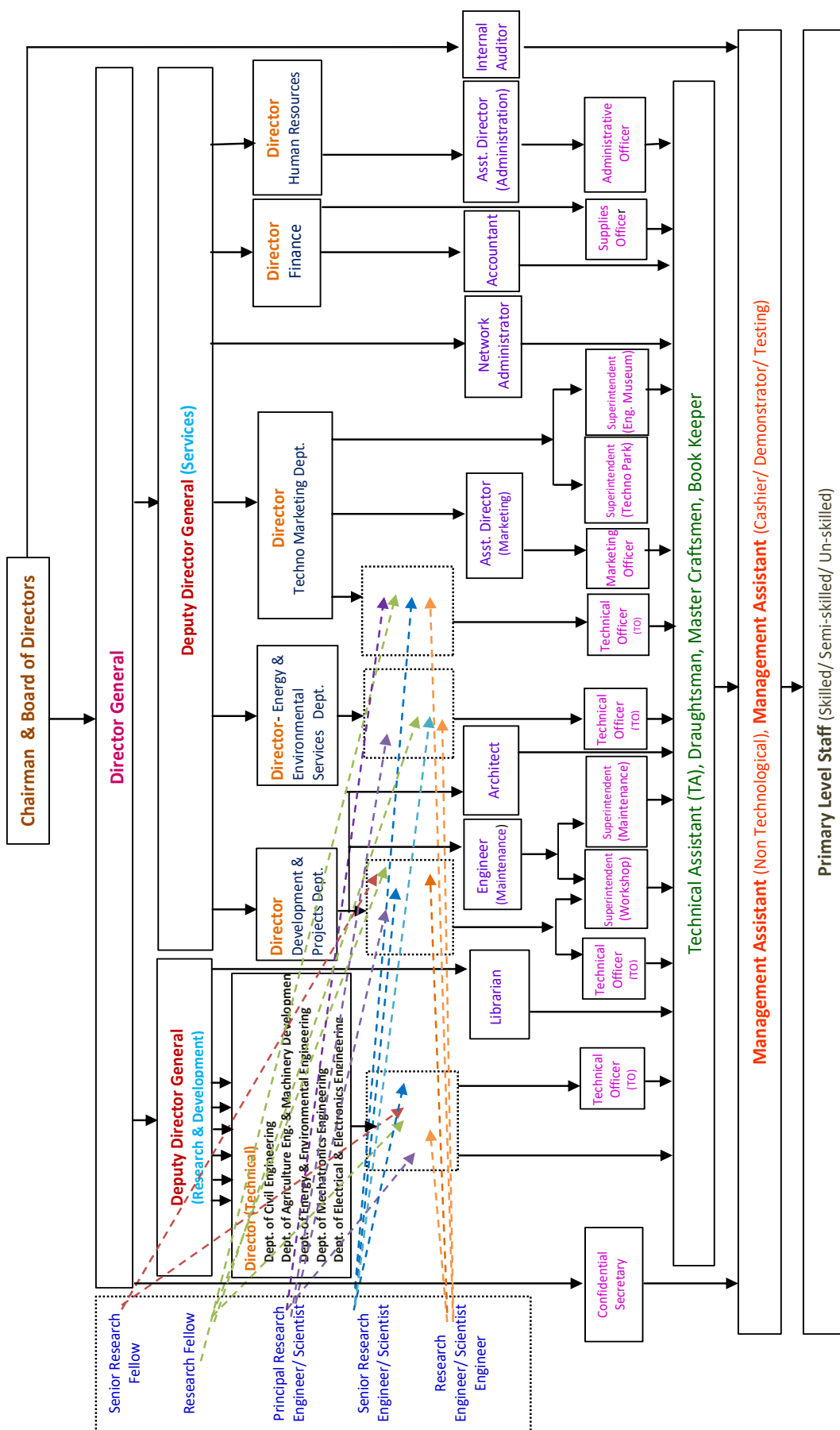
(from 03/11/2022)

Ms. H D N K Hettiarachchi

MSc in Development Studies
(from 22/02/2022)

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

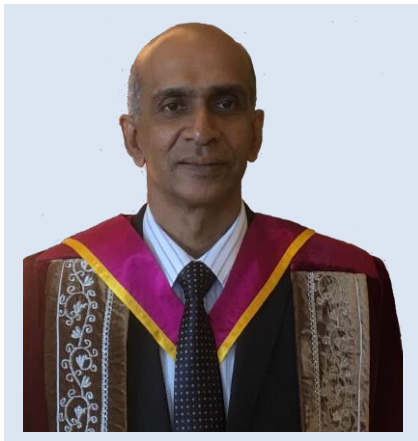
ORGANIZATION STRUCTURE





04.

Chairman's Message



As the Chairman, I am pleased to present the 2022 Annual Report of the National Engineering Research and Development Centre of Sri Lanka (NERDC), premier Engineering Research and Development organization in the country. NERDC was established in the year 1974 almost five decades ago having its primary objectives of providing Engineering Intervention for Socio Economic Development in Sri Lanka. Since then, NERDC has been engaging in Engineering Research and Development (R&D) projects, Pilot projects, Commercial projects, Consultancy services, Technical services to the Industries, Technology popularization, Promoting Science and Technology education among students and community.

Main contribution of the NERDC Engineering Research and development out puts to the socio-economic development of the country are enhancement of industrial productivity, efficient use of resources, capacity building of inventors & technical personnel, creation of self-employment opportunities, feeding innovative technical solutions etc.

In line with the government's effort to eliminate the use of the chemical fertilizers in agriculture of Sri Lanka by substituting with organic fertilizers nationwide and following the directions given by "Vistas of Prosperity", NERDC initiated a project to develop machineries required for the production of organic fertilizer. This involved an investigation into the current agricultural landscape in the country.

As per the directives given by State Ministry of Research and Innovation of Sri Lanka, under the guidance from his excellency president of Sri Lanka, National Engineering Research and Development Centre (NERDC) has successfully developed and fabricated a pilot unit of Oxygen concentrator. An oxygen concentrator is a medical device that draws in air from the environment and passes it through molecular sieve beds to concentrate room oxygen to therapeutic levels for delivery to the patient. After presenting it to his excellency the president at a ceremony held to commemorate the National science day, the equipment has been handed over to the Bio-medical Research Institute for compliance testing.

Energy and Environmental Services Department of NERDC Centre is involved in monitor, control, improve and manage the energy systems, industrial processes & environmental systems in industries, commercial establishments, government institutions, etc. and to provide the standard testing facilities for air quality, wastewater, refrigerators, electrical lamps and automobile batteries. It operates with ISO17025:2017 accredited laboratories for wastewater analysis, Noise level measurements, Air quality measurements, electrical lamps testing and refrigerator testing. During the year 2022 department had provided 549 services to the industry with income generation of LKR.23.6 Million.

To popularize the technologies developed and to transfer the technologies to suitable entrepreneurs countrywide, the Center has implemented various programs such as in-house and outside training programs, awareness programs, and demonstration programs during the year 2022.

I wish to take this opportunity to thank the Board of Directors, Senior Management, Engineering and Technical staff and other supporting staff for their contribution and services to accomplish the organizational targets and goals.

Prof. S U Adikari
Chairman



05.

Director General's Message



I am delighted to share with you the exceptional performance of the National Engineering Research and Development Centre (NERDC) of Sri Lanka for the year 2022.

Over the past 12 months, NERDC, being the premier Engineering R&D institute of our country, has diligently conducted innovative R&D activities and provided industrial services despite facing numerous challenges. This steadfast commitment has been the key element to NERDC's resilience and dedication to advancing engineering excellence.

In 2022, NERDC actively engaged in collaborative R&D projects to address national requirements. Notable achievements include the development of shredders of various capacities, compost turners to facilitate organic fertilizer manufacturing, and the successful pilot project of a Maldives Fish dryer to benefit the fishing community. These accomplishments, alongside the industrial and consultancy services rendered by NERDC, showcase the institute's significant contributions to the engineering and development sectors in the country.

Looking ahead, I am confident that NERDC, with its rich history in R&D, possesses the necessary resources and adaptability to continue making strides in fostering economic benefits for our country through industry collaboration and coordination.

A handwritten signature in blue ink, reading "Jayathu", with a long horizontal line extending to the right.

Dr. Jayathu G Samarawickrama
Director General



06.

Top Management and Executive Staff

DIRECTOR GENERAL

Dr. Jayathu G Samarawickrama
B.Sc. Eng. (Moratuwa), M.Sc. (Moratuwa),
Ph.D. (UNIGE and IIT, Italy), MIEEE
(from 02.11.2022)

Eng. D D Ananda Namal
M Eng. (Energy Technology), BSc Eng. (Hon), C Eng., MIE (SL)
(up to 02.11.2022)

DEPUTY DIRECTOR GENERAL (RESEARCH AND DEVELOPMENT)

Eng. J A A D Jayasuriya
MEng., BScEng., MIE(SL)

DEPUTY DIRECTOR GENERAL (SERVICES)

Eng. A A S P Jayasinghe
MBA, BScEng.(Hons), CEng., MIE(SL)

RESEARCH FELLOW

Eng.(Ms.) N G D Wijesiriwardhana
MEng., CEng., FIE(SL)

Eng. W K R Peiris
MA (Buddhist Stud), BScEng., CEng. MIE(SL)

ENG. E A N K EDIRISINGHE
MPHIL, BSC ENG., MIE (SL)

Eng. K T Jayasinghe
MEng., BScEng., C Eng., MIE(SL)

ENGINEERING AND EXECUTIVE STAFF IN THE DEPARTMENTS OF NERDC

Civil Engineering Department (CED)	Agriculture Engineering and Machine Development Department (AE&MD)
Director (Technical) Eng. J A C Chrishanthi MEng., BSc Eng., C Eng., MIE (SL)	Director (Technical) Eng. K Y H D Shantha MScEng., BSc Eng., AMIE(SL)
Research Engineer Eng. I P Batuvita MEng, BSc Eng., AMIE(SL) Eng. A N S Amaradasa BSc Eng., C Eng., MIE (SL)	Principal Research Engineer Eng. A R C Salgado BScEng., AMIE(SL) Eng. A J G S Dahanayake BSc Eng., C Eng., MIE(SL) Dr. A P D Liyanage PhD, MSc, BSc
Engineer Ms. K S S Weerasinghe Special Apprentice (Civil Eng.), IESL (Part I) (up to 30.09.2022)	Senior Research Engineer Dr. T N Fernando PhD, B.Tech, AMIE (SL) Research Engineer Mr. A B M L B Abeykoon BSc Eng (up to 09.10.2022)

Energy and Environmental Engineering Department (ENED)	Electrical and Electronic Engineering Department (ELED)
Acting. Head of Department Principal Research Engineer Eng. N S M D K Nanayakkara MEng., PG Dip, BScEng, AMI(SL)	Senior Research Engineer/ Head of Department Mr. N S K Samarasinghe MSc, BSc Eng., AMIE (SL)
Principal Research Engineer Eng. H M L U Herath BScEng., AMIE(SL) Senior Research Engineer Dr. S M Pathirana PhD, MSc, BSc, AMIE(SL) Research Engineer Eng. P F S Perera BSc Eng., M Eng., AMIE(SL) Engineer Mr. W A L S Karunawardhana HNDE	Principal Research Engineer Eng. U C Botheju BScEng. CEng., MIE (SL) Senior Research Engineer Eng. (Ms.) A G M T Siriwardhana MSc, MEng., BScEng., AMIE(SL) Mr. D A M S K Hemasiri MSc. BScEng. Research Engineer Eng. (Ms) D R S K Wimalaratne B Tech. (Hon), AMIE(SL) Eng. Y S P Weerasinghe B Tech. AMIE (SL) Eng. H K I S Lakmal BScEng., AMIE(SL) (up to 02/03/2022)
Mechatronics Engineering Department (MED)	Energy and Environmental Services Department
Principal Research Scientist/ Head of Dept. Dr. T A Suranga Anuruddha PhD, MSc. BSc(IT)	Research Engineer/ Head of Department Eng. T K Geeganage M Sc, BSc Eng., AMIE (SL)
Principal Research Engineer Eng. H P H Kumara MSc Eng., EC(UK) PART I & II, AMIE(SL) Research Engineer Eng. W M S P K Wanasinghe BTech., AMIE (SL) Eng. S M S S Senaratne MScEng., B Tech, AMIS(SL) Eng. I D M H Jayantha BSc Eng., AMIE (SL)	Senior Research Engineer Eng. (Ms.) N P T Perera MSc, BScEng.(Hons.), AMIE(SL) Research Engineer Eng. M D Sahardeen BSc Eng., AMIE(SL) Eng. K P D D Jayasekera BSc Eng.(Hons), AMIE(SL) Eng. (Ms) G S R Costha MEng, BScEng., AMIE (SL) Eng. H A K Hapuarachchi BScEng., AMIE(SL) Engineer Ms. H D C Hettiarachchi NDT

Development and Project Department (DPD)	Techno Marketing Department (TMD)
Director (Technical) Eng. K L Meedeniya MSc Eng., BSc Eng., C Eng., MIE(SL)	Senior Research Engineer/ Head of Department Eng. P M Y S Pathiraja MSc Eng. BSc Eng., AMIE (SL)
Principal Research Engineer Eng. W W P K Perera M Eng., BSc Eng. (Hons), C Eng., MIE (SL) Eng. S D S P Solangaarachchi MSc, BSc Senior Research Engineer Eng. M A D S Premadasa MBA, BSc, AMIESL Senior Research Scientist (Architecture) Ms. B D R Chamika MSc, BSc. Chartered Architect AIA (SL) Engineer Ms. D M A K Digala Special Apprentice (Civil Eng.), IESL(Part (1 Mr. P A U W K Paranagampola NDES	Research Engineer Eng. (Ms) J K I P Jayasiri BSc Eng., AMIE(SL) Research Scientist Ms. B D P S Ranaweera M Sc, BSc Asst. Director – Marketing Ms. P N D Pathirana BSc (Hons) Sp. MCIM (UK), MSLIM (SL) <i>TECHNOLOGY INCUBATOR</i> Senior Research Engineer Eng. S A P Shalinda Silva M Eng., BSc Eng. (Hons), C Eng., MIE (SL) Research Engineer Eng. Suresh P Perera CEng(UK), MIMechE(UK), NDT, AMIE (SL) Eng. S M V P D Senanayake BSc Eng., AMIE(SL) Mr. H B L H Gunasekera BSc Eng (up to 12/10/2022)
Maintenance Unit and Central Workshop	Technology Park and Engineering Museum
Engineer Mr. N A D D J Prasanna NDT	Superintendent – Technology Park Mr. W K C P Walpola BSc Superintendent – Engineering Museum Ms. D K Jayaweera BSc (Hons)
Human Resources Department (HRD)	Finance Department (FD)
Director (Human Resources) Ms. D A M Munasinghe MBA (HRM) , BSc (HRM), AM (CIPM)	Director (Finance) Mr. J M R S Jayasinghe MBA, BBA Sp. , CPFA, ICASL – Prof. Part I (up to 29/09/2022)
Information Technology Unit	
Network Administrator Mr. B P Wickramasooriya MSc, BSc (Computing & Information Systems)	Librarian Ms. D M T P K Devagiri MMSc , B A (Library Science) Sp., ASLLA
Internal Audit Unit	Procurement Unit
Internal Auditor Mr. B P S Kumara MPM, HNDA	Supplies Officer Mr. R H A Jeewananda BSc (Physical Science)



07.

Human Resources Management

Human Resources

Human resource is the key asset of Research & Development organizations in accomplishing its goals and objective through performance excellence. It is Human Resource that make things happen while all the other resources make things possible. In NERDC, the management makes much effort to direct, utilize and develop its human resources in the most effective and efficient manner.

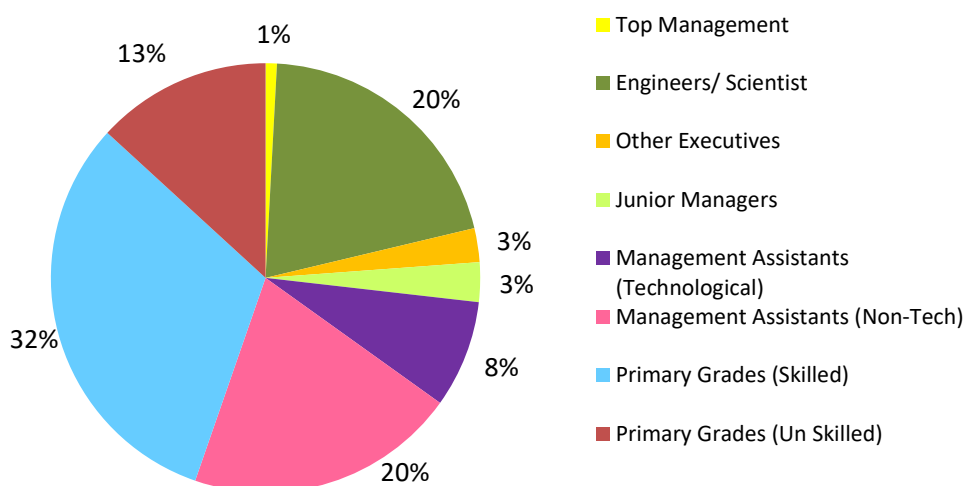
However, the major problem identified in Human Resource Management (HRM) within the Centre is the recruitment and retaining of competent Engineering researchers. This is identified as a very common issue in most of the research organizations in Sri Lankan State sector. A comprehensive integrated strategy is thus required to address this issue, such as national policy on Engineering /scientists researchers programming, research application for national development and recruitment, incentives, rewards, recognitions, capacity development of researchers/scientists, etc. specially in Engineering field.

Despite the difficulties of recruiting and retaining capable Engineers within the Centre due to the repeatedly mentioned issues in remuneration schemes, NERDC has taken all its measures to recruit and retain Engineering staff through offering attractive capacity development opportunities as a strategy. NERDC provides a wide range of capacity development opportunities for its Engineers/ Scientists within the capacity and limitations of the Centre and Higher studies, training and development, international exposures, creating facilitating environment, assisting carrier development, etc. are some of such strategies undertaken by NERDC.

7.1 Summary Information on Staff Strength

Category	Approved Cadre	Actual Cadre
Top Management	3	2
Engineers/ Scientist	68	48
Other Executives	10	6
Junior Managers	14	7
Management Assistants (Technological)	25	19
Management Assistants (Non-Tech)	52	48
Primary Grades (Skilled)	107	74
Primary Grades (Semi-Skilled)	3	0
Primary Grades (Un Skilled)	65	31
TOTAL	347	235

Actual Cadre Summary as at 31.12.2022



7.2 Cadre Management

- No recruitment has been done in 2022 due to government instruction.
- Retirement and resignations in 2022

No	Name	Designation	Category	Leaving Date
Retirements				
1	Ms. K S S Weerasinghe	Engineer	MM 1-1	30/9/2022
2	Mr. W L M J Perera	Labourer	PL-3	5/10/2022
3	Mr. N L Jayawickrama	Electrician	PL-3	5/10/2022
4	Mr. W Beny Silva	Labourer	PL-3	5/10/2022
5	Eng. D D A Namal	Director General	HM 2-3	10/11/2022
6	Mr. J A A D Jayasooriya	Deputy Director General (R&D)	HM 2-1	31/12/2022
7	Eng. N G D Wijesiriwardana	Research Fellow	HM 2-1	31/12/2022
8	Mrs. A G N P K Annettigama	Accounts Assistant	JM 1-2	31/12/2022
9	Mr. W P S A Jude Perera	Welder/Fitter	PL-3	31/12/2022
10	Mr. T Ananda Fernando	Carpenter	PL-3	31/12/2022
Resignations				
1	Mr. W B S O Abeyawardhana	Electronics Technician	PL-3	19/01/2022
2	Mr. W K C P Walpola	Superintendent -T Park	JM 1-2	11/02/2022
3	Eng. N K I S Lakmal	Research Engineer	AR -1	02/03/2022
4	Mr. H W G R L Hettigewatta	Office Aide	PL-1	18/03/2022
5	Mr. M S Ananda	Management Assistant	MA 1-2	3/6/2022
6	Mr. G S Samannath	Mason	PL-3	1/5/2022
7	Ms. B J A Dharmaratne	Management Assistant (Cashier)	MA 1-2	1/7/2022
8	Mr. E Premaratne	Machinist	PL-4	5/8/2022
9	Mrs. P I Adhikari	Draughtsman	MA 2-2	15/09/2022
10	Mr. J M R S Jayasinghe	Director (Finance)	HM 1-3	29/09/2022
11	Mr. K N K D Perera	Welder/Fitter	PL-3	22/11/2022
12	Mr. M Sameera Sanjaya	Labourer	PL-1	22/09/2022
13	Mr. H B L H Gunasekera	Research Engineer	AR -1	12/10/2022
14	Mr. A B M L B Abeykoon	Research Engineer	AR -1	9/10/2022
15	Ms. G G S Priyangika	Management Assistant	MA 1-2	1/11/2022
16	Mr. I R Sarath	Motor Mechanic	PL-3	22/11/2022
17	Mr. K M T C Bandula Konara	Office Aide	PL-1	1/12/2022
18	Mr. S W Abeywardena	Office Aide	PL-1	1/12/2022

7.3 Training and Continuous Professional Development.

Since the Key role of the NERDC is engineering research and development, constant concern is tendered in human resources development by the management. Accordingly all steps are taken to enhance knowledge, skills and competencies with correct attitudes in all categories of the staff having purposes of obtaining efficient and effective service to the Centre and career development of the staff.

7.3.1 Providing facilities for fulfillment of postgraduate/ Professional Qualifications

Higher Studies ongoing in 2022				
No	Name	Designation	Program	Institution
1.	Eng. (Ms) J K I P Jayasiri	Research Engineer	M/Eng. PG Diploma in Energy Technology	University of Moratuwa
2.	Eng. (Mr.) S A P S Silva	Senior Res. Engineer	PhD Studies	University of Moratuwa

7.3.2 In House Training Programs Organized

No	Program Name	Date	For whom	No of Participants
1	Good Housekeeping Practices and Workshop Safety Training	31.08.2022	Engineers, Management Assistant (Tech.) Management Assistant (Non. Tech.) Primary Level	50
2	Awareness Program on File Management System	31.08.2022	Engineers, Executive Management Assistant (Tech.) Management Assistant (Non. Tech.) Primary Level	43
3	Presentation on Introduction to Trello Project Management Tools	29.11.2022	Engineers, & Executives	35
4	Presentation on Rainwater Harvesting for Dinking Purposes in Sri Lanka	22.11.2022	Engineers, Executives, Management Assistant (Tech.) Management Assistant (Non. Tech.)	24

7.3.3 Participation for Local Training Programs / Workshop / Seminars / Symposiums

No.	Name & Designation	Program Participated	Conducted by	Period
1	Mr. K P D D Jayasekera Research Engineer	International Conference on Resource Efficiency and Circular Economy - 2020	National Cleaner Production Centre	19.01.2022
2	Ms. N P T Perera Senior Research Engineer			
3	Ms. N P T Perera Senior Research Engineer	Assessor Training Course for on ISO/IEC 17043:2010	SLAB	21.03.2022 to 25.03.2022
4	Ms. K T Piyumali Technical Assistant	Workshop on Managerial Skills Development	SDFL	21.03.2022 to 22.03.2022
5	Ms. D R S K Wimalaratne Research Engineer			
6	Eng. Y S P Weerasinghe Research Engineer			
7	Mr. N S K Samarasinghe Senior Research Engineer			
8	Eng. D A M S K Hemasiri Senior Research Engineer	Certificate course in English Language	SDFL	25.03.2022
9	Mrs. U A N Fernando Management Assistant			
10	Mrs. K B H V Leitan Management Assistant			25.03.2022

No.	Name & Designation	Program Participated	Conducted by	Period	No of Participants
11	Miss. J D Janani Wasana Management Assistant	Workshop on Preparation of Final Accounts	SDFL	10.03.2022 to 11.03.2022	01
12	Mrs. B A L P Bollegala Management Assistant	Maintain of Personal Files	SDFL	30.03.2022 to 31.03.2022	03
13	Mrs. M G S N Gamage Management Assistant				
14	Mr. P C N P Perera Management Assistant				
15	Mr. M D Sahardeen Research Engineer	Training Programme on Consultant Development in ISO 50001:2018	National Cleaner Production Centre	28- 01.04.2022	01
16	Ms. N P T Perera Senior Research Engineer	EnMS Expert Training Program - Con	National Cleaner Production Centre	19-20.10 /22- 24.11/2022	01
17	Mr. K P D D Jayasekera Research Engineer	Training Program on Chemicals Management	National Cleaner Production Centre	27- 28.10.2022	01
18	Mr. I P Batuwita Research Engineer	Workshop on Building Life Cycle Assessment	GBCSL	25- 26.11.2022	01
19	Ms. K T Piyumali Technical Assistant	Training Program on Designing of Electrical Systems for Building	CETRAC	15- 17.12.2022	02
20	Ms. D R S K Wimalaratne Research Engineer				
21	Eng. E A N K Edirisinghe	Seminar on value added opportunities and strategies for mineral industry in Sri Lanka	IDB	30.12.2022	10
22	Mr. K L Meedeniya				
23	Ms. N P T Perera				
24	Dr. T A S Anuruddha				
25	Dr. A G M T Siriwardane				
26	Mrs. P M Y S Pathiraja				
27	Mr. S A P Shalinda Silva				
28	Mr. K P D D Jayasekera				
29	Ms. D R S K Wimalaratne				
30	Mr. I P Batuwita				



08.

Performance Highlights of the year 2022

08.1 Key Research and Development Highlights

Completed R & D projects

8.1.1 Development of Machineries Required for Manufacturing Organic Fertilizer

In line with the government's effect to eliminate the use of the chemical fertilizers in agriculture of Sri Lanka by substituting with organic fertilizers nationwide and following the directions given by "Vistas of Prosperity", NERDC initiated a project to develop machineries required for the production of organic fertilizer. This involved an investigation into the current agricultural landscape in the country.

Based on the investigation carried out, it was identified that there exists a demand for **Shredders /Crushers** as well as large scale **Compost Turner** NERDC responded by developing reliable, simple and user-friendly technologies prioritizing safety and energy efficiency organic fertilizer machine.

Shredder /Crusher (Medium Scale)

This machine is easily movable mounted on caster wheels. The shredded/ crushed material produced by the machine are in the range of ½" to 1½" which is the recommended optimum size for composting.

Capacity: 350-400kg/h

Power: 5kW three-phase motor or 7-8 hp two-wheel tractor engine



Shredder/Crusher Engine mounted (Medium Scale) and Shredder/Crusher Motor mounted (Medium Scale)

Shredder/Crusher (large scale)

Shredder/Crusher (large scale) is designed for the large-scale manufacturing is connected to the PTO output of a four-wheel tractor.

Capacity: 1500- 2000 kg/h.

Power: Any four-wheel tractor with the engine capacity of 25-45 hp



Shredder/Crusher Four-wheel tractor mounted (Large Scale)

Compost Turner (large scale)

Compost turner is also designed for large scale compost manufactures with the facilities of leveled flat land for the compost bed and operated by a four-wheel tractor attached to the machine, as shown in the figure.

Turning capacity: 100 m/h ; width of the compost bed 1.5m

Power: The four-wheel tractor of 45 hp capacity or above, with a dual clutch is recommended for the easy operation of the turner



Compost Turner- Four-wheel tractor mounted (Large Scale)

NERD Centre signed an MOU with Divulapitiya Pradesiya Saba for field testing the machineries. Shredder machines successfully completed the field trial at Walpita agricultural Farm operated under Divulapitiya Pradesiya Saba. Divulapitiya Pradesiya Saba agreed to purchase shredder machines for their production of organic fertilizer.

8.1.2 Development of Maldives fish dryer for fishing community; *Testing and commissioning*

This is a collaborative R&D project with National Aquatic Research and Development Agency (NARA). NERDC developed this natural convection type drying and smoking unit for manufacturing of high quality Maldives fish aiming to overcome the limitations of the sun drying process which is the most common practice at present. The dryer was designed to produce a good quality product of Maldives fish with required nutritional and sensory properties. The dryer is especially suitable for fishing communities producing Maldives fish at the cottage level.

Testing of the dryer was conducted at the site in Kottegoda , Dikkwella at Matara. Both smoking and drying steps can be conducted using this natural convection type dryer. Because biomass is used as the fuel, the ability of continuing drying even in adverse weather conditions is an advantage of this dryer. The drying test showed that cleaned, salted boiled 1000 kg of fresh *Skipjak Tuna* (Balaya) fish, after smoking, can be dried up to the required quality, in this unit within a 4-day time period with fuel added only during daytimes.



The dryer installed at the site



Testing of the dryer with NARA



Boiled and smoked fish ready for drying



Final product of Maldives fish after drying.

Specifications of the Maldives fish dryer

- + Type: Natural convection
- + Fuel: Fuel wood; logs or sticks
- + Dimensions: 6.2m x 1.6m x 3.2 m
- + Capacity: ~ 1000 kg of slated and boiled fish
- + Tray area: 37.5 m²
- + Drying temperature: 400C – 480C
- + Drying time: 48 h
- + Consumption of fuel: 7 – 12 kg/h
- + Height of chimney for flue gas: 3.2 m

8.1.3 Oxygen Concentrator

As per the directions given by State Ministry of Research and Innovation of Sri Lanka, under the guidance from his excellency president of Sri Lanka, National Engineering Research and Development Centre (NERDC) to developed and fabricated a pilot unit of Oxygen concentration. An oxygen concentrator is a medical device that draws in air from the environment and passes it through molecular sieve beds to concentrate room oxygen to therapeutic levels for delivery to the patient. The equipment has been given to the Bio-medical Research Institute for compliance testing. Approval of NMRA is expected to conduct field testing.

8.2 Services Highlights

8.2.1 Energy and Environmental Services Department (E & ESD)

E&ESD of NERDC Centre is involved in monitor, control, improve and manage the energy systems, industrial processes & environmental systems in industries, commercial establishments, government institutions, etc. and to provide the standard testing facilities for air quality, wastewater, refrigerators, electrical lamps and automobile batteries. It operates with ISO17025:2017 accredited laboratories for wastewater analysis, Noise level measurements, Air quality measurements, electrical lamps testing and refrigerator testing. During the year 2022 department had provided 549 services to the industry with income generation of LKR.23.6 mn.

A summary of physical & financial targets and achievements of commercial activities in 2022 are given in the following table :

Commercial Activities Target and Achievements E&ESD in 2022

Project/ Activity	Physical (Number of Services)		Financial (Million LKR)					
			Income			Contribution		
	Target	Achievement	Target (LKR)	Achievement (LKR)	Target Over Achievement (%)	Target (LKR)	Achievement (LKR)	Target Over Achievement (%)
Services to Industries	952	493	30.5	21.8	71.5	25.5	12.3	48.2
Laboratory Testing for Industries	275	55	5.5	1.7	30.9	3.3	0.2	6.0
Training Programs	2	1	0.1	0.1	100	0.3	0.0	0.0
Total	1229	549	36.1	23.6	67%			18%

Services to Industries

The main commercial activity of the department is to provide industrial services. The following services are offered to different industries based on their requests.

- Boiler analysis, tuning and efficiency tests
- Industrial process monitoring services
- Noise and air quality control system designs
- Emission control system designs
- Noise and air quality monitoring services based on the standards
- Stationary sources emission monitoring services based on the standards
- Indoor air quality monitoring based on the OSHA standard.

In 2022, the income target and achievement through the industrial services were LKR 30.5 Million and LKR 21.8 Million respectively. The expected contribution target and achievement were LKR 25.5 Million and LKR 12.3 Million respectively.

Number of services carried out in various activities are given in the following Table.

Activity Type	Number of Services
Boiler performance & emission monitoring of stationary sources combustion systems	167
Noise level measurements as per the regulations	127
Ambient air quality monitoring as per the regulations	96
Providing solutions to control environmental issues in industries	26
Industrial process monitoring services	67
Instrument calibration and cross checking	09
Energy Audit	01
Incubator services for inventors	18

Different Laboratory Services

Activity Type	Number of Services
Civil engineering testing laboratory testing	117
Waste water sample analysis	65
Electrical lamp testing	48
Refrigerators testing	4
Automotive battery testing	4

8.2.2 Development of Project Department

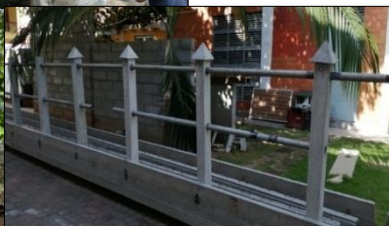
Development & Project Department (DPD) provides the services to industrial sector including government and non-government institutions and individuals, in various disciplines using NERDC- developed technologies and consultancies. In general, DPD undertake jobs in related to NERDC developed technologies such as cost-effective building construction, foot bridges, retaining walls, crematoria, incinerators, bio-gas generators, and machinery fabrication including design and consultancies.

Summary of commercial work done by Department of Development and Projects

No.	Commercial Activities	Total Commercial Value (Rs.Mn.)
01	Civil Engineering Consultancy Services	1,916,574
02	Construction of building and structures	37,417,191
03	Selling of concrete products	2,214,990
04	Manufacture and supply of products, construction, fabrication, installation, repair and improvements of plants and periodic services of cremators	9,508,299



Renovation of old semi-permanent building of the IIM in to three storied building at the premises of IIM- Rajagiriya (Stage-1) (DPD/COM/6.5(1)/20/2022)



construction of Foot Bridge - Civil Engineers Alumini - Moratuwa Uni.

Income details

Activity	Sub activity	Estimated Income 2022(LKR, without taxes)
Providing Civil Engineering consultancy services	Total	2,221,573.71
	Providing Civil engineering consultancy services to Plastipak Lanka (pvt) Ltd (Balance work of the project continued in 2022)	29,500.00
	Site inspection fees	310,707.04
	Prepare and submission of Civil engineering drawings and reports	
	Providing Civil engineering consultancy services to Regional Director of Health services Kaluthara - Wadduwa (Balance work of the project continued in 2022)	1,000,000.00
	Providing Civil engineering consultancy services to Consultancy services for China Biotechnology Lab at ITI (Balance work of the project continued in 2022)	89,700.00
	Providing Civil engineering consultancy services to Express News Papers (Ceylon)(Pvt) Ltd	
	Providing Civil engineering consultancy services to Rubber Development Department	
Civil Engineering Construction Services	Total	85,441,983.77
	Construction of Foot Bridge - Civil Engineers Alumini - Moratuwa Uni (Balance work of the project continued in 2022)	404,951.19
	Renovation of Lecture Hall Building & Canteen building at IIM Institute of Indigenous Medicine Rajagiriya (Balance work of the project continued in 2022)	10,037,032.58
	Renovation of the old semi-permanent building of the Institute of Indigenous Medicine into a three storied building Institute of Indigenous Medicine-IIM	
Pre-cast and Pre-stressed concrete items	Total	2,214,990.08
Minor consultancy, construction, fabrication, installation and other services (Other than Civil Engineering)	Total	10,754,733
	Fabricate & selling of a Pepper seed separator	31,481.50
	Fabricate & selling of a pepper seed separator	31,481.50
	Fabricate & selling of a Herbal leaf & seed crusher	109,000.00
	Fabricate & selling of a Manioc Slicer	38,000.00

Activity	Sub activity	Estimated 2022(LKR, without taxes)
Minor consultancy, construction, fabrication, installation and other services (Other than Civil Engineering)	Fabricate & selling of a Brick cutting mc to Lanka AAC (pvt) Ltd.	184,910.71
	Fabricate & selling of an Oil expeller mc to State Ministry Ayurvedic Hospital	186,000.00
	Inspection of Bio gas plant at Rhino roofing product Ltd. Ekala	10,000.00
	Site inspection and submit a report for air conditioner units at Base Hospital Kumburupitiya	60,000.00
	Inspection of Bio gas plant at Tea research Institute	15,000.00
	Fabricate & supply of a Jack operated juice extractor mc to Uni Natural (Pvt) Ltd.	108,500.00
	Fabricate & supply of a crusher mc to Uni Natural (Pvt) Ltd.	183,000.00
	Ambalangoda UC Crematorium repair	450,000.00
	Repairing of Crematorium Udubaddawa PS-3272-Vat 8%	450,000.00
	Fabrication & Supply of Palmyrah Juice Extractor (Pulp Extractor) (10 Nos)	2,491,000.00
	Construction of Secondary chamber for crematorium at Attanagalla	2,570,000.00
	Repairing of Crematorium at Yatinuwara PS	600,000.00
	Repairing of Crematorium at Bulathsinghala PS	800,000.00
	Repairing of Crematorium at Wattegama UC	675,000.00
	Quality testing and submit areport for a motor bike chassis frame	490,000.00
	Annual maintenance services for crematorium at Hanguranketha PS, Walapane PS, Karandeniya PS and Bentota PS and training programmes	491,084.25

8.2.3 Services from Techno-Marketing Department

Technology Transfers for year 2022

	Activity	Quantity
01	Licenses Issued for the Entrepreneurs	34
02	License Renewal	94
03	Technology Transfer Training Programs	07

 Technology Popularization activities conducted by the Techno Marketing Department

	Activity	Quantity
01	Electronics & Print Media Activity	10
02	Published Articles	22
03	Newsletters	04
04	Social Media Activities	17
05	Awareness Programs	22
06	Exhibitions	05
07	Monitor of licensees	16
08	Product launches	01
09	Licensees forum	01

 Patents Processed

Patent Filed

No	Patent
01	Hand Hygiene compliance alert system for doorways

Patent Obtained

No	Patent
01	An Energy saving method for making Sodium Carboxy Methyl Cellulose (NaCMC) by using corn husks and bagasse as main raw material.
02	Method for manufacturing of paint for Compressed Stabilized Earth Blocks(CSEB)
03	Automated fresh milk collecting palls washing machine
04	Industrial coconut de-husker for removing coconut husks from nuts

 Activities of Technology Park & Engineering Museum

	Activity	Quantity
01	Visitors to Technology Park & Engineering Museum	2751
02	Special Study Programmes	13
03	Maths Cafe Programmes for Teachers	04



09.

Financial Review of the Centre in 2022

09.1 Accounting Policies

1.1 Basis of Preparation

Financial Statements, which comprise the Statement of Financial Position, Statement of Performances, Changes in Equity and Cash Flows together with Accounting Policies and Notes to the Financial Statements, have been prepared in accordance with Sri Lanka Public Sector Accounting Standards.

Current accounting period is from 1st January 2022 to 31st December 2022

These Financial Statements are for year ended 31st December 2022

1.2 Basis of Measurement

The Financial Statements of the Centre, which comprise the Statement of Financial Position, Statement of performances, Changes in Equity and Cash Flows have been prepared on the basis that the Centre is going concerns and on a historical cost basis.

1.3 Functional and Presentation of Currency

Items included in the Financial Statements of Centre are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). Financial Statements are presented in Sri Lankan Rupees, which is the Centre's functional and presentation currency unless stated otherwise.

1.4 Comparative Information

The Financial Statements for the comparative periods comprise results for the twelve months period from 1st January 2022 to 31st December 2022. In this circumstance, the comparative information for the Statement of Financial Position, Statement of Performances, Statement of Changes in Equity and Cash Flow Statement and related notes are comparable with the current period. Changes to the comparative information were done based on the previous year adjustments consist from page **no 32 to 33** & due to accommodate of the impact of said changes, the comparative information has been titled with "Restated".

1.5 Significant Accounting Judgments, Estimates and Assumptions

The preparation of Financial Statements are in conformity with Sri Lanka Public Sector Accounting Standards requires Management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income, expenses and the disclosure of contingent liabilities. However, uncertainty about these assumptions and estimates could results in outcomes that require material adjustment to the carrying amounts of the assets or liabilities affected in future periods. The Centre's Management has made an assessment of its ability to continue as a going concern and is satisfied that it has the resources to continue in business for the foreseeable future. Furthermore, Management is not aware of any material uncertainties that may cast significant doubt upon the Centre's ability to continue as a going concern. Therefore, the financial statements continue to be prepared on the going concern basis.

02. Property, Plant and Equipment

2. 1 Recognition and Measurement

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labor, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located and capitalized borrowing costs. Purchased software that is integral to the functionality of the related equipment is capitalized as part of that equipment. When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment. The gain or loss on disposal of an item of property, plant and equipment is determined by comparing the proceeds from disposal with the carrying amount of the property, plant and equipment, and is recognized net value within other income/other expenses in Performance Statement. When revalued assets are sold, any related amount included in the revaluation reserve is transferred to retained earnings.

2.2 Revaluation

The items within a class of property, plant and equipment are revalued simultaneously in order to avoid selective revaluation of assets and the reporting of amounts in the Financial Statements that are a mixture of costs and values as at different dates. However, a class of assets is revalued on a rolling basis provided revaluation of the class of assets is completed within a short period and provided the revaluations are kept up to date.

The fair value of items of property, Plant & Equipment, is usually determined from market-based evidence by appraisal. An appraisal of the value of an asset is normally undertaken by a member of the valuation profession, who holds a recognized and relevant professional qualification. For many assets, the fair value will be readily ascertainable by reference to quoted prices in an active and liquid market.

If the carrying amount of a class of assets is increased as a result of a revaluation, the increase shall be credited directly to revaluation surplus. However, the increase shall be recognized in surplus or deficit to the extent that it reverses a revaluation decrease of the same class of assets previously recognized in surplus or deficit.

If the carrying amount of a class of assets is decreased as a result of a revaluation, the decrease shall be recognized in surplus or deficit. However, the decrease shall be debited directly to revaluation surplus to the extent of any credit balance existing in the revaluation surplus in respect of that class of assets.

Revaluation increases and decreases relating to individual assets within a class of property, plant and equipment has been offset against one another within that class but must not be offset in respect of assets in different classes.

2.3 Depreciation

Depreciation is based on the cost of an asset less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately. Depreciation is recognized in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. The estimated rates of the current and comparative years are as follows:

Asset Category	Depreciation %
Land	- (Note 01)
Building	2.5
Office Equipment	15
Tools	15
Demonstration items	15
Computers	33 1/3
Vehicle	15
Furniture & Fittings	10
Plant Machinery & Lab Equipment	15
Library Books	5
Infrastructure	15
Software	33 1/3

Land (Note 01)

Land is rent basis for 50 years from Industrial Development Board. That agreement continues up to 13th August 2028. The land contains areas of A 9.5 R3 P19.

2.4 De-Recognition

The carrying amount of an item of property, plant and equipment is de-recognized on disposal of or when no future economic benefits are expected from its use or disposal. Gains and losses on de-recognition of the asset are determined by comparing the proceeds from disposal with the carrying amount of property, plant & equipment and are recognized net within 'other income' in the Performance Statement.

2.5 Intangible Assets

Intangible assets that are acquired by the Centre and have finite useful lives are measured at cost less accumulated amortization and accumulated impairment losses. Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. Amortization is based on the cost of an asset less its residual value. Amortization is recognized in Performance Statement on a straight-line basis over the estimated rates of intangible assets, from the date that they are available for use. The estimated rates for current and comparative years are as follows:

Patents and trade-marks and software are represented in this classification. Among the list of patents, the items that patents obtained and the items in patent proceeds in progress are represented. Once the patent applications is rejected, it will be charge to the income statement. The value of the patent is represented the fee of the patent application which had been taken as the nominal value as NERDC Centre needs to show the items in financial statements. However the revaluation process of the patents is continued with high expectation of the revaluation of patents will be done soon.

- Software 33 1/3 years Amortization methods, useful life and residual values are reviewed at end of each year.

3. Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is based on the first-in-first-out (FIFO) principle, and includes expenditure incurred in acquiring the inventories and other costs incurred in bringing them to their existing location and condition.

Chemical stocks and the Work in progress of projects are valued at the cost or net realizable value whichever is lower.

4. Trade Receivables

Trade receivables of the Centre are recognized at fair value

Provision for Uncertainty Recoveries

A provision for Rs. 313, 171.36 (Department of Agrarian Development) had been taken in to the books that based on the judgment and feedback of the customers and the nature of business environment of the customer in concern. Based on above criteria following amount is forecasted as some sort of risk of recoveries.

5. Cash and Cash Equivalents

In the Statement of Cash Flows of the Centre, cash and cash equivalents include cash in hand, cash at bank, Temporary call deposits.

6. Loans and Receivables

Financial assets with fixed or determinable payments that are not quoted in an active market, such assets are recognized initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition Loans and receivables comprise cash and cash equivalents, trade receivables and amounts due from related parties.

7. Financial Liabilities

The Centre classifies non-derivative financial liabilities into the other financial liabilities category. Other financial liabilities comprise trade payables and related party payables. Such financial liabilities are recognized initially at fair value plus any directly attributable transaction costs. The Statement of Financial Position when, and only when, the Centre has a legal right to offset the amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

8. Employee Benefits

Retirement benefits to employees are provided according to the laid down statutory requirements. Centre contribution for provident fund and employees' Trust Fund is 15% and 3% respectively. Gratuity provision is made according to the Gratuity Act No.12 of 1983. Provision is done for the employees from year one of service in the Centre. The funds required for payment of gratuity is given by Treasury when requires. Provision is calculated as follows

$$(\text{Last drawn Basic Salary plus cost of living \& other allowances}) \times \frac{1}{2} \times \text{Completed Number of Years.}$$

9. Provisions

A provision is recognized if, as a result of a past event, the Centre has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation.

10. Provisions, Contingent Assets and Contingent Liabilities

Provisions are made for all obligations existing as at the Balance Sheet date when it is probable that such an obligation will result in an outflow of resources and a reliable estimate can be made of the quantum of the outflow. All contingent liabilities are disclosed as a note to the financial statements.

11. Revenue

Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Centre, and the revenue and associated costs incurred or to be incurred can be reliably measured. Revenue is measured at the fair value of the consideration received or receivable, net of trade discounts, NBT and value added taxes. The following specific criteria are used for recognition of revenue:

a) Sale of Developed Products

Revenue from the sale of developed products, is recognized when the significant risk and rewards of ownership of the products have passed to the buyer with the Centre retaining neither a continuing managerial involvement to the degree usually associated with ownership, nor an effective control over the products which are sold.

b) Rendering of Services

Revenue from rendering of services is recognized in the accounting period in which the services are rendered or performed.

c) Construction Revenue

Construction revenue is recognized by reference to the stage of completion where the contract outcome cannot be measured reliably and revenue is certain.

d) Taxes

Taxes include Income Tax, Value Added Tax, and Nation Building Tax. The Centre Companies in the Centre pay such taxes in accordance with the respective statutes. Currently NBT is not applicable and the Centre is registered institute for VAT in voluntary basis.

e) Interest Income

Interest income is recognized as and when the interest accrues.

f) Gains and Losses on Disposal of Assets

Net gains and losses of a revenue nature arising from the disposal of property, plant and equipment and other non-current assets, are accounted for in the Income Statement, after deducting from the proceeds on disposal, the carrying amount of such assets and the related selling expenses. Gains and losses, arising from activities incidental to the main revenue, generating activities and those arising from a Centre of similar transactions which are not material, are aggregated, reported and presented on a net basis.

g) Other Income

Other income is comprised with net income of Technology Transfer Projects which are completed, Interest income on call deposits, Liquidity damages, Bond income, Interest on loans, Nonrefundable deposits, Registration of Suppliers, Sundry income, Damaged Stock disposal income, Gain on disposal of assets and overhead recovery etc.

h) Differed Income

Where the Capital grant relates to an asset released from the general treasury, when the recurrent grant relates to an expense item, it is recognized as income over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate.

Differed income has been recognized from Capital grants received from other sources from the year of 2022 accompanied the Prior year adjustments from the initial year the Differed Income treatment accommodated in the Accounts. Accordingly differed income recognized all ought of capital grants benefited by the NERDC.

12. Grants

Grants are recognized when there is a reasonable assurance that the grant will be received and all attaching conditions will be complied with. When the recurrent grant relates to an expense item, it is recognized as income over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate. Where the Centre receives non-monetary grants, the asset and that grant are recorded at fair value.

Capital grants from the treasury are received in two forms according to the nature of the items as for procurement of items represented in balance sheet as Rehabilitations and acquisitions. The other form is for procurement or rendered services on recurrent nature items in income statement comprise of Research and Development, popularization, capacity building and calibration. Accordingly, the statement of equity represent only the capital funds utilization for acquiring balance sheet items as the rest accounted through income statement. Capital grants for income statement items are recognized in the income statement as revenue when the grants are utilized actually.

Current year total capital grant **Rs.13,720,000.00** and recurrent grant **Rs,301,800,000.00** were received in compliance with Treasury grants.

Contingent Liability Impact of Grants.

Out of Rs 8,975,449.33 the amount in the progress of completion in the equity statement of the heading of Rs.1,530,000 amount represents from the year 2017 in progress for establishment of the overall information system package which the composition of HR module. Payroll module and the Accounting module. The Supplier could not yet to complete the accounting module as to comply the requirement of NERDC which the said allocation is still in the NERDC. Since there arise an uncertainty to successfully completion of Accounting module, NERDC may refund or to utilize for needed capital budgetary item in the acquisition category in a future year.

13. Expenditure and Presentation in Income Statements

Expenses are recognized in the income statement on the basis of a direct association between the cost incurred and the earning of the specific items of income where appropriate. All expenditure incurred in running of the Centre and depreciation of the property, plant & equipment has been charged against to income in calculating the surplus/ (deficit) for the period.

14. Research & Development

Research & Development projects are mainly funded by the Treasury. If Research projects are partly or fully funded by a client this income is taken against the expenditure.

When costing the research projects only the direct cost considered.

15. Mechatronics Enabled Economic Development Initiative (MEDI)

The Standard Training Prototyping and Testing Facility (SPTF) will be a Project under the NERDC and will be transformed to government owned private, independent and non-profitable entity where the Sri Lankan Electronics/Mechatronics companies/startups could utilize for their product designing developing and prototyping, testing and certifying with nominal fee.

Main Objective of this project is to increase locally developed high tech product exports in the country therein increase the GDP growth. Further creation of a set of local Hi Tech manufactures and value chain for licensed products is an objective too.

9.2 Statement of Financial Position As At 31.12.2022

Figures
in LKR

	2022	Restated 2021
Assets		
Current Assets		
Cash & Cash Equivalent	147,404,422.71	144,590,658.86
Trade Receivables	24,233,287.20	13,463,382.78
Inventories	15,547,633.68	12,615,896.85
Pre – Payments	548,371.50	599,744.50
Other Current Assets	39,878,822.45	24,536,267.34
	<u>227,612,537.54</u>	<u>195,805,950.33</u>
Non-Current Assets		
Property Plant & Equipment	362,716,332.13	424,238,974.24
Capital Work in Progress	-	-
Other Intangible Assets	415,819.45	404,319.45
Other non-current Assets	28,837,836.91	29,308,189.13
	<u>391,969,988.49</u>	<u>453,951,482.82</u>
Total Assets	<u>619,582,526.03</u>	<u>649,757,433.15</u>
Liabilities		
Current Liabilities		
Trade & Other Payables	77,273,697.73	43,698,289.99
Total Current Liabilities	<u>77,273,697.73</u>	<u>43,698,289.99</u>
Non-Current Liabilities		
Provision for Gratuity	106,099,475.00	126,544,822.50
Security Deposit	3,700.00	6,200.00
	<u>106,103,175.00</u>	<u>126,551,022.50</u>
Total Liabilities	<u>183,376,872.73</u>	<u>170,249,312.49</u>
Total Net Assets	<u>436,205,653.30</u>	<u>479,508,120.66</u>
Net Assets/Equity		
Differed Income	296,669,003.17	358,191,645.28
Capital Contributed by the Government Entities	158,204,862.16	158,628,984.20
Revaluation Reserve		
Accumulated Surpluses/(Deficits)	<u>(18,668,212.03)</u>	<u>(37,312,508.82)</u>
Total Net Assets/Equity	<u>436,205,653.30</u>	<u>479,508,120.66</u>

Prof. S U Adikary
ChairmanDr.J G Samarawickrama
Director GeneralP G C Kumari
Actg. Director Finance

9.3 Statement of Financial Performances for the Year Ended 31.12.2022

	Figures in LKR	
	2022	Restated 2021
Revenue		
Transfers from the Government Entities	309,529,000.00	296,345,345.09
Differed Income	67,689,764.15	76,792,936.82
Other Income	49,146,148.83	35,394,097.61
Total Revenue	426,364,912.98	408,532,379.52
Expenditure		
Administrative Cost	319,816,176.38	290,286,777.23
Other Expenses	20,170,137.20	22,416,015.12
Depreciation	67,689,764.15	76,792,936.82
Financial Cost	44,538.46	47,240.00
Total Expenditure	407,720,616.19	389,542,969.17
Surplus/(Deficit) for the Period	18,644,296.79	18,989,410.35

9.4 Cash Flow Statement for the Year Ended 31 December 2022

	Figures in LKR	
	2022	Restated 2021
Net Cash flows from Operating Activities		
Surplus/ (Deficit) from Ordinary Activities	18,644,296.79	18,989,410.35
Non- Cash Movements		
Depreciation	67,689,764.15	76,792,936.82
Increase/(decrease) Differed Income	(67,689,764.15)	(76,792,936.82)
Increase in provision for bad debts	-	313,171.36
Increase/(decrease) in payables	49,776,505.24	(12,342,162.23)
Increase/(decrease) in relating to employee costs	(36,648,945.00)	9,477,806.66
(Gains)/losses on sale of property, plant and equipment	-	(11,377.50)
(Increase)/decrease in other current assets	(17,752,566.72)	977,991.12
(Increase)/decrease in receivables	(10,769,904.42)	(6,778,829.98)
Net Cash Flows from Operating Activities	3,249,385.89	10,626,009.78
Cash Flow From Investment Activities		
Purchase of assets	(6,178,622,.04)	(37,013,395.72)
Proceeds from sales of assets	-	11,377.50
Capital Item Grants from other sources		
Net Cash Flows from Investment Activities	(6,178,622,.04)	(37,002,018.22)
Cash Flow From Financing Activities		
Capital grant	5,743,000.00	13,059,654.91
Net Cash Flow from Financing Activities	5,743,000.00	13,059,654.91
Net Increase/(Decrease) in Cash & Cash Equivalents	2,813,763.85	(13,316,353.53)
Cash & Cash Equivalent at Beginning of the Period	144,590,658.86	157,907,012.39
Cash & Cash Equivalent at End of the Period	147,404,422.71	144,590,658.86

9.5 Statement of Changes in Equity as at 31.12.2022

Figures in LKR

	Capital Introduced	Re Stated Government Contributed Capital	Capital from Other sources	Re Stated Differed Income	Re stated Accumulated Surplus /(Deficit)	Total Net Assets/Equity	Balance As At 31.12.2020
Balance as at 01/01/2021	1,000,000.00	38,367,115.94	148,653,534.87	392,926,835.29	(56,301,911.17))	524,645,574.93	578,497,309.66
Changes in equity for 2021						-	
Capital Grant received –Treasury		13,059,654.91				13,059,654.91	50,840,597.45
SPTF Net result adjustment					-		(121,593.35)
Vehicle Grant							(5,094,832.12)
Balance Sheet Vs Income statement					(8.00)	(8.00)	-
Net impact - Differed income, disposal				-		-	(2,702,697.00)
Net of Capital purchase less recoverable depreciation to Differed Income		(42,451,321.52)		(34,735,190.01)		(77,186,511.53)	(68,441,023.94)
Capital Reserved From other Sources			-				99,900.00
Surplus/Deficit for the period					18,989,410.35	18,989,410.35	(28,432,085.77)
Increase in revaluation reserve							-
Balance as at 31/12/2021	1,000,000.00	8,975,449.33	148,653,534.87	358,191,645.28	(37,312,508.82)	479,508,120.66	524,645,574.93
Changes in Equity for 2022							
Capital Grant received –Treasury		5,743,000.00				5,743,000.00	13,059,654.91
SPTF Net result adjustment							(8.00)
Balance Sheet Vs Income statement							
Net of Capital purchase less recoverable depreciation to Differed Income		(6,167,122.04)		(61,522,642.11)		(67,689,764.15)	(77,186,511.53)
Correction to previous additions							
Capital Reserved From other Sources							
Surplus/Deficit for the period					18,644,296.79	18,644,296.79	18,989,410.35
Balance as at 31/12/2022	1,000,000.00	8,551,327.29	148,653,534.87	296,669,003.17	(18,668,212.03)	436,205,653.30	479,508,120.66

9.6 Previous Year Adjustment					Figures in LKR		
Ref No	Description	Details of adjustment			2021	Balance before 01.01.2021	Effect to the Balance Sheet
			Declared	After Adjustment			
	Balance b/f				19,164,239.02	(55,968,823.32)	
1.01	DPD/COM/47/2020	Income	1,300,000.00	1,300,000.00			Increase the current Liabilities
		Expenditure	909,611.31	935,039.32			
		Net	390,388.69	364,960.68		(25,428.01)	
1.02	E&ESD/COM /07/80/2018	Income	26,500,000.00	26,500,000.00			Increase the current Liabilities
		Expenditure	14,342,246.41	14,392,706.25			
		Net	12,157,753.59	12,107,293.75		(50,459.84)	
1.03	DPD/COM/07/39/2020 -value of work done is reduced & retention receivable is reduced	Income	229,082.00	204,032.00			Decrease the current Assets
		Expenditure	61,471.88	61,471.88			
		Net	167,610.12	142,560.12			
	Retention Receivable		11,454.10	-	(11,454.10)		
	Value of work done		70,043.14	56,447.24	(13,595.90)		
1.04	Under Provision of Audit fees	2022	306,600.00	308,400.00	1,800.00		Increase the current Liabilities
1.05	DPD/COM/06(02)/49/2020	Income	929,193.15	929,193.15			Decrease the Current Liabilities
		Expenditure	765,799.32	715,799.32			
		Net	163,393.83	213,393.83	(50,000.00)		
1.06	DPD/COM/6.6/50/2022	Income	2,066,700.00	2,066,700.00			
		Expenditure	1,927,215.69	1,777,945.69			
		Net	139,484.31	288,754.31	(149,270.00)		

1.07	DPD/COM/6(02)/59/2020	Income	26,110,215.25	26,110,215.25			
		Expenditure	19,352,019.96	19,102,019.96			
		Net	6,758,195.29	7,008,195.29	(250,000.00)		
1.08	CED/COM/01/98/2016	Income	5,110,589.00	4,853,389.00		(257,200.00)	Increase the Current Liabilities
		Expenditure	1,992,319.23	2,514,567.90	522,248.67		
		Net	3,118,269.77	2,338,821.10			
1.09	CED/RES/25/21	Income	-				Increase the Current Liabilities
		Expenditure	254,401.69	329,401.69	75,000.00		
		Net	(254,401.69)	(329,401.69)			
	Total				19,288,967.69	(56,301,911.17)	

9.7 Notes to the final Position as at 31/12/2022

01. Deposits Kept as Securities for Guarantee Bonds

Guarantee is issued in favor of	Bond No /Date	Expires On	Bond	Certificates Pledge as security	Amount (LKR)	Bank	Bond Value (LKR)
Toyota Lanka (Pvt)Ltd	15/2008 12/18/2022- 12/17/2022	12/17/2023	Guarantee Bond	C/33734579-507908	100,000.00	BOC-JAELA	75,000.00
The Institute of Indigenous Medicine	20220003979-12/22/2022-11/06/2022	04/03/2023	Advance Payment Guarantee	1804804-87961092 1804805-87961119	5,000,000.00 5,000,000.00		8,558,410.00
The Institute of Indigenous Medicine	20220003978-12/22/2022-11/06/2022	04/03/2023	Performance Bond	1804809-8808829	3,000,000.00		2,379,412.75

02. Commissioner General of Inland Revenue

NERDC is regarded as VAT non registered institute with effect from the financial year 2020 and reactivate for volunteer basis for VAT registration with effect from February 2022.

03. Temporary Deposits

Further advances received from the customers are secured in the form of temporary call deposits with the bank, until such time it is used for the purpose. Interest earned is shown under other income.

04. Work in Progress

Work in progress of ongoing projects has been disclosed under inventories.

Capital work in progress has been presented separately in the statement of financial position.

All capital work in progress had been turned into completed works with additional effort by NERDC as the treasury policy of all capital works funds of current year could not continue to the next year.

05. Related Party Disclosures (SLPSAS 14)

The following disclosures are made in the financial statements of National Engineering Research & Development Centre of Sri Lanka for the year 2022, which is a separate reporting entity. During reporting period Centre had not provided any remuneration compensation to close family members of key management personnel.

06. (a) Standards Training Prototyping & Testing Facility

The Ministry has already initiated a project on Mechatronics Enabled Economics Development Initiative (MEDI) with the main Objective to grow our Economy and our hi-tech exports, and to reduce our imports through designing smart Machines for licensed manufacture locally and globally. In achieving this objective, it is intended to setup a product Design Engineering Park (PDEP) for mechatronics PDE companies with two components; a Long – Term Loan Facility (LTLF) and shared services Standards Training, Photocopying and test facility (SPTF). The NERDC handles the SPTF transactions as the way of current account and reflection the status in the statement of Financial Position as impact from last year.

(b) Discontinue in Future

Initially SPTF operation has been decided by the ministry to wind up with the NERDC once in the progressing activities are completed. but later some of the fixed assets which were located in separate location out of NERDC was transferred to NERDC and at the moment all the fixed assets which were purchased are available at the NERDC. Value Rs.34, 221,656.17 worth fixed assets are available at the NERDC. We have not recognized these assets under our Property Plant & Equipment, due to not availability of written approval from Ministry to do so. But some assets are used by different department of the Centre. Rs.2, 485,027.07 payment is pending from Ministry to NERDC for the expenses which were incurred for the SPTF project.

07. Accidents, Damages and Recoveries

For the financial year 2022, the motor car KR -5435 and for the year 2022 KX-7908 motor car, KF – 5940 motor car had an accident. the total value which has been agreed to pay by the Insurance company has been recorded under the note no 06 of other current assets.

08. Not Licensed & Insured Vehicles in 2022

The car 301 – 3740 & the three wheeler QM -7208 has not obtained Licenses & Insurances for the year 2022/23. Because these two vehicles should be undergo compulsory repair & maintenance in order to obtained Licenses & Insurances for year 2022/23. Licenses & Insurances will be obtained once the necessary maintenance & repairing are completed.

09. Contingent Liabilities.

Rs. 990,930.00 payment is pending for the Inquiry Panel for the inquiries conducted on some specific matters at the NERD Centre. Due to the matters arise on legality of the appointment of the panel as well as the rates approved to pay for the panel, there is a doubt about probability of paying pending payment to the panel. Centre has request guidance from ministry and there is a ongoing audit clarification to be solved before processing payment.

Former Deputy Director General (R&D) Mr. J A A D Jayasuriya has taken legal action against NERD Centre for the decision of compulsory early retirement imposed on him by the Centre. Court case is still on going. Based on the available information it cannot decided the possibility of losing or winning of the court case by the Centre.

01. Cash Flow Note for the Year Ended 31st December 2022**Figures in LKR**

		Restated
Cash Flow from Operating Activities	2022	2021
Receipts		
Project Income	77,102,055.14	69,803,517.48
Recurrent & Research Grants	309,529,000.00	296,345,345.09
Interest Received	14,900,362.20	6,501,674.86
Other Receipts	3,484,646.40	1,234,379.70
Payments		
Employee Cost	(300,404,380.23)	(234,834,403.32)
Superannuation cost	(15,588,820.00)	(14,079,168.30)
Supplies	(52,464,227.25)	(89,072,218.68)
Other Payments	(29,873,731.17)	(23,586,245.04)
Corporate Income Tax & Others	(3,435,519.20)	(1,686,872.01)
Net Cash Flow from Operating Activities	3,249,385.89	10,626,009.78
Cash Flow From Investment Activities		
Purchase of assets	(6,178,622,.04)	(37,013,395.72)
Proceeds from sales of assets	-	11,377.50
Capital Item Grants from other sources	-	-
Net Cash Flows from Investment Activities	(6,178,622,.04)	(37,002,018.22)
Cash Flow From Financing Activities		
Capital grant	5,743,000.00	13,059,654.91
Net Cash Flow from Financing Activities	5,743,000.00	13,059,654.91
Net Increase/(Decrease) in Cash & Cash Equivalents	2,813,763.85	(13,316,353.53)
Cash & Cash Equivalent at Beginning of the Period	144,590,658.86	157,907,012.39
Cash & Cash Equivalent at End of the Period	147,404,422.71	144,590,658.86

02. Cash & Cash Equivalent

	As At 31/12/2022	As At 31/12/2021
Bank of Ceylon Ja-Ela Branch A/C No 404949	6,776,599.69	13,000,050.64
Bank of Ceylon Ja-Ela Branch A/C No 405005	1,138,411.18	353,663.61
Bank of Ceylon Ja-Ela Branch A/C No 404956	1,626,245.62	633,363.45
Bank of Ceylon Corporate Branch A/C No 1667	2,359,666.22	316,922.34
Cash in Hand	3,500.00	186,658.82
Temporary Call Deposits-Ja-Ela Branch	131,500,000.00	83,100,000.00
Temporary Call Deposits-Corporate Branch	4,000,000.00	47,000,000.00
	<u>147,404,422.71</u>	<u>144,590,658.86</u>



10.

Financial Achievements during the last 10 years

Financial Performance - 2013 - 2022

Rs.000

Year	Approved Capital Budget	Received	Actual Capital Expenses	NERDC Earning
2013	92,676	61,519	36,910	40,890
2014	63,000	58,716	38,333	65,540
2015	65,000	43,569	37,137	66,913
2016	50,000	47,345	45,505	73,349
2017	57,000	55,357	76,655	31,625
2018	57,000	57,000	47,908	70,622
2019	51,750	44,690	50,900	83,793
2020	58,000	57,838	27,530	39,848
2022	41,500	28,730	32,764	72,848
2022	45,000	13,472	14,833	83,645
TOTAL	580,926	468,236	408,475	629,073



11.

Records of the Audit and Management Committee Meetings

Special Decisions Taken at the Audit Committee in 2022

Meeting	Decisions
1st Meeting 15 th February 2022	- Regarding the account reports pertaining to the year 2022, the view of the members of the Audit Committee was that the effects for transaction due to incidents occurred in the history, should be evaluated as per the accounting standards. At the same time those difference should be revealed under accounting notes. - The members of the Audit Committee expressed that the disposing of all the items and any relevant auction activity, should be done by a committee appointed, with the approval of the Board of Directors. - Member of the audit committee, who is the Chief Internal Auditor of the ministry pointed out that, the final internal audit plan is to be prepared based on the risk areas.
2nd Meeting 1 st August 2022	- Government Auditor General pointed out that the audit report should reveal not only the unsuccessful projects but also the reason for unsuccessfulness. At the same time he emphasized that in starting a new projects, a feasibility study is to be done, an effective projects plan is to be prepared considering the social feasibility and the generation of new entrepreneurs. - The Audit Committee recommended to conduct an inquiry on delay in installation of newly purchased software, selection of supplier and making payment and forward a report to the Board of Directors.



12.

**Report of the Auditor General for
the year ended 31 December 2022**

My No. IMT/C/NERDC/FA/2022

Date: - 31 May 2023

Chairman

Sri Lanka National Engineering Research and Development Center

REPORT OF THE AUDITOR GENERAL ISSUED IN TERMS OF SECTION 12 OF THE NATIONAL AUDIT ACT NO.19 OF 2018 ON THE FINANCIAL STATEMENTS OF THE SRI LANKA NATIONAL RESEARCH AND DEVELOPMENT CENTER FOR THE YEAR ENDED 31ST DECEMBER 2022

1. Financial Statements

1.1 Qualified Opinion

The audit of the financial statements of Sri Lanka National Engineering Research and Development Center for the year ended 31st December 2022 consisting of the statement of financial position as at 31st December 2022, the statement of financial performance, the statement of changes on equity and the statement of cash flow for the year then ended was carried out under my direction in pursuance of the provisions in Article 154 (1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read with the provisions of the National Audit Act No.19 of 2018 and the Financial Act No. 38 of 1971. My report to be submitted in pursuance of the provisions in Article 154 (6) of the constitution will be tabled in Parliament in due course.

I was of the opinion that the financial statements of the Center for the year ended 31st December 2022 give a true and fair view of its financial position, financial performance and cash flows for the year then ended in accordance with the Sri Lanka Public Sector Accounting Standards.

1.2 Basis for Qualified Opinion

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

1.3 Other information included in the annual report 2022 of the Center

Other information means the information that has been included in the annual report 2022 of the Center expected to be provided after the date of the report of this audit but not included in the financial statements and my audit report thereof. The management shall be accountable for this other information.

Other information is not covered by my opinion for the financial statements and I do not give any confirmation or express any opinion in that regard in any manner.

With regard to my audit on the financial statements, my responsibility is to read the other information identified above, when available, and in doing so, consider whether the other information is materially inconsistent with the financial statements or with my knowledge obtained in the audit or otherwise.

In reading the annual report 2022 of the Center, if I observe any material misstatements, such matters should be communicated to the controlling parties for rectification. If there are found any further incorrect errors, they will be included in the report that will be tabled in Parliament in due course by me in accordance with Article 154(6) of the Constitution.

1.4. Responsibilities of the management and controlling parties on Financial Statement

Management is responsible to determine the necessary internal control mechanism for the preparation and fair presentation of this financial statements in accordance with the Public Sector Accounting Standards where such statements can be free from material misstatement whether due to fraud or error.

In preparing the financial statements, the management is accountable to determine the possibility of constant existence of the entity and except if the management intends to liquidate it or discontinue its operations where no alternatives available, then it is the responsibility of the management to maintain accounts based on the ongoing concept and disclose the matters with regard to the constant existence of the Center.

Controlling parties will bear the responsibility with regard to the financial reporting process of the Center.

As per Section 16 (1) of the National Audit Act No.19 of 2018, it is the responsibility of the Center to maintain proper books and records of all its income and expenditure and assets and liabilities in order to enable it to prepare annual and periodic financial statements.

1.5 Auditor's Responsibility on Audit of Financial Statement

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from the material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance; however is not a guarantee that an audit conducted in accordance with the Sri Lanka Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise due to fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to make influence on the economic decisions of users taken based on these financial statements.

As a part of an audit in accordance with Sri Lanka Auditing Standards, I exercise professional judgment and maintain professional scepticism throughout my audit. The followings were also made by me:

- In providing a basis for my qualified audit opinion, a proper auditing procedure was designed and implemented in ad-hoc position in order to identify and assess the risk of occurrence of sufficient false statements that would become in the financial statements occurring due to fraud or errors. The impact of fraud is greater than the impact of material misstatements due to misrepresentation because they are caused by collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Although not for the purpose of expressing an opinion on the effectiveness of internal control, an understanding of internal control was obtained in order to design audit procedures that are appropriate in the circumstances.

- The appropriateness of the accounting policies used, the reasonableness of accounting estimates and the related disclosures made by management were evaluated.
- The appropriateness of using the going concern basis of accounting was determined based on the audit evidence obtained regarding whether events or conditions have caused a material uncertainty about the entity's ability to continue as a going concern. If I observe that a material uncertainty exists, I have to pay my attention in my auditor's report to the related disclosures in the financial statements and, if such disclosures are inadequate, to modify my opinion. However, future events or conditions may cause the entity to cease to exist.
- The structure and content of the financial statements including disclosures, and the overall presentation of the financial statements were assessed for their appropriate and fair inclusion of underlying transactions and events.

I brought the important audit findings, major weakness of internal control and other matters being identified during my audit into the notice of the parties having control over.

2. Report on other legal and regulatory requirements

- 2.1. The National Audit Act No. 19 of 2018 includes special provisions regarding the following matters.
- 2.1.1. I obtained the information and explanations required for the audits as per the requirements mentioned in section) 12a) of the National Audit Act No. 19 of 2018, and the Center had maintained the proper financial records as shown by my examinations.
- 2.1.2. The Center's financial statements are consistent with the previous year as per the requirements mentioned in section) (1) 6d) (iii) of the National Audit Act No. 19 of 2018.
- 2.1.3. The recommendations made by me in accordance with the requirements mentioned in section) (1) 6d) (iv) of the National Audit Act No. 19 of 2018, in the previous year have been included in the financial statements.
- 2.2. In keeping the proceedings adopted and the evidence obtained to the material facts, nothing has come to my notice so as to make the following remarks.
- 2.2.1. According to the requirements mentioned in section) 12d) of the National Audit Act No. 19 of 2018, a member of the governing body of the Center has a conflict of interest, directly or indirectly, outside the ordinary course of business in relation to any agreement involving the Center.
- 2.2.2. According to the requirements mentioned in Section) 12f) of the National Audit Act No. 19 of 2018, except for the following observations, there are practices that do not comply with any relevant written law or other general or special directives issued by the governing body of the Center.

Reference to Rules/Directives	Details
(a) Public Administration Circulars Nos. 14/2014 dated 30 May 2014 and 18/2018 dated 31 July 2018 and Section XLVIII 13.1 of the Establishment Code.	Investigations had been carried out by a Committee on Inquiry by appointing without any specific information or suspicion of misconduct against 6 officers, including the Director General and Deputy Director General (Research and Development). In addition, allowances of total amounting to Rs. 4,035, 135 had been made to the Committee on Inquiry in contradiction of the circulars, and the payments of Rs. 1,170, 209 had also been made to provide transport facilities.
(b) Section XLVIII 13.1 of the Establishment Code.	The Deputy Director General (Research and Development) was sent on compulsory leave by the Chairman and the Board of Directors from 07 June 2022 without being found guilty of misconduct. Due to reinstatement by the court order issued against it, Rs. 1,008, 160 of salary and Rs. 75, 000 of legal fees had been paid without receiving any service.
(c) Paragraph 6.6 of the Operational Guidelines Manual on Public Enterprises dated 16 November 2021	Although a copy of the draft annual report for the year under review was to be submitted to the Auditor General within sixty days of the end of the financial year, the said report had not been submitted by even the audit date of 10 May 2023

2.2.3. That the Centre has acted in a manner inconsistent with the powers, functions and duties of the Centre as required by Section) 12g) of the National Audit Act, No. 19 of 2018

2.2.4. That the funds of the Centre have been obtained and utilized in a prudent, efficient and effective manner within the time limits and in accordance with the relevant laws, as required by Section 12 (h) of the National Audit Act, No. 19 of 2018.

3. Other Matters

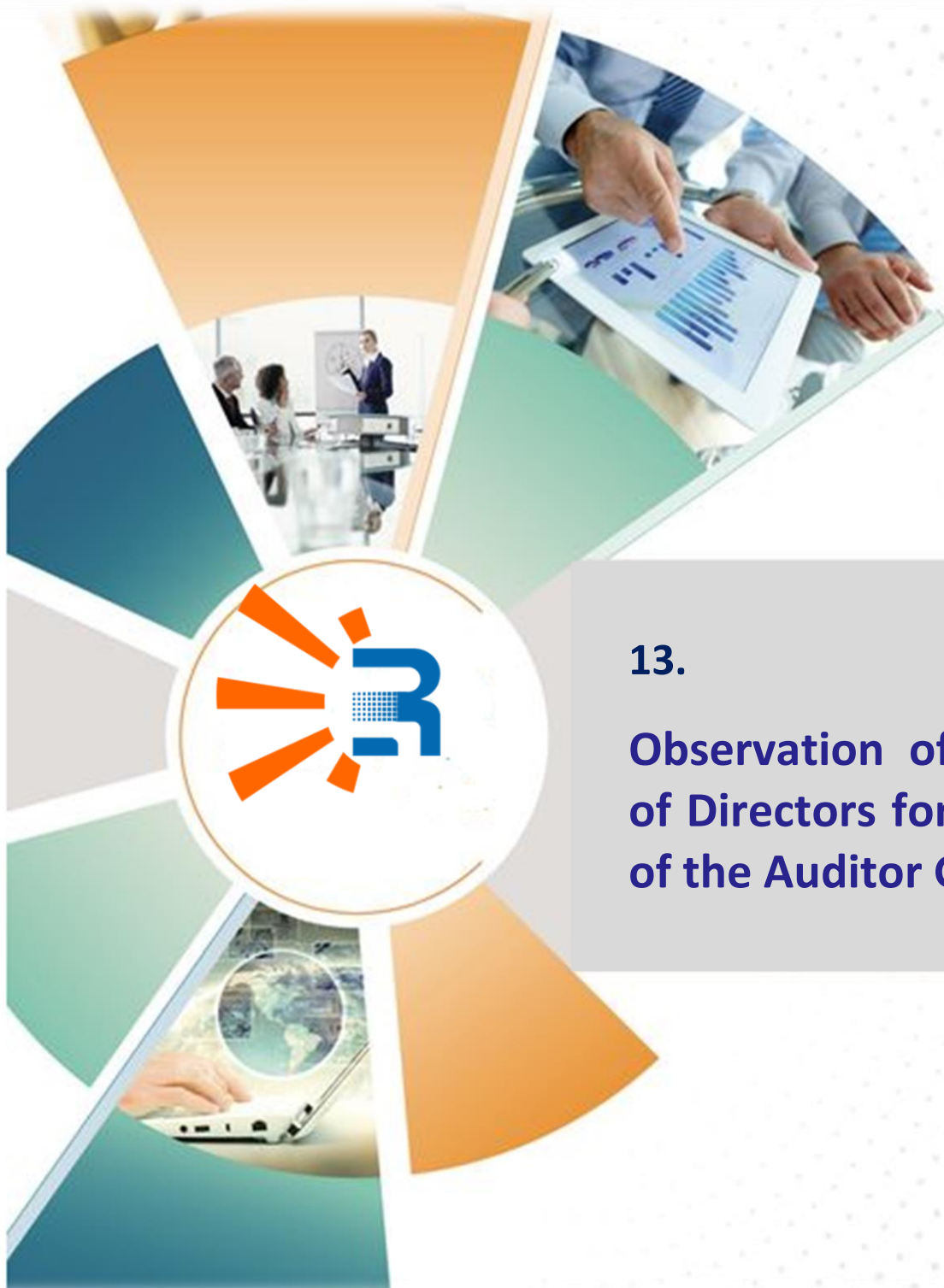
- (a) Capital grants provided for major expenses should be spent within the relevant year itself, and if any amount remains, the expected expenses to be incurred from those funds should be disclosed. Although there was an amount of Rs. 8,551,327 remaining from the capital grants provided to this Center in the year under review and previous years, the expected expenses from that amount had not been disclosed.
- (b) During the year under review, the Information Technology Division purchased a unit of "Hardware Fire wall watch Guard fire box 290" for a value of Rs. 2,217,600. The average monthly requirement of the institution was stated as 40Mbps, and the monthly capacity of the fire wall equipment provided above was 5.5 Gbps (5500 Mbps). Thus, the equipment purchased was a device with a capacity of 5460Mbps more than the monthly requirement.

The previous equipment in similar nature provided by the supplier-institution itself could only be used during the period 2016-2022, and since the new Fire wall system provided in the year 2022 was manufactured in the year 2021, this system may also have to be removed in the year 2029 or thereabouts, it is expected that the use of this network system will increase by 5460Mbps in the next 06 years. Since this is not possible, it was observed that unnecessary money has been spent on equipment with a capacity exceeding the required amount as mentioned above.

- (c) While the need to provide further technology incubator services for the upliftment of the local industry sector was great in the country, 14 high-capacity high-tech machinery worth Rs. 103,423,406, a machine worth Rs. 13,250,000 that had not been included in the fixed assets register and another machine of which value had not been estimated, remained idle or underutilized.
- (d) After repairing the equipment of the 2,500 KG capacity NCC milling machine purchased under the Asian Development Bank loan project in July 2001 at a cost of Rs. 26,488,211 in 2014 and 2015 at a cost of Rs. 10,441,338, another NCC milling machine with a lower capacity (2200 KG) was purchased in 2017 at a cost of Rs. 26,150,497. It was observed that the other machine purchased spending that of money had not been even sufficient to perform the tasks required by the first machine.
- (e) The Director Human Resources Management of the Center had been transferred to the Industrial Park from February 07, 2022, without any assignment of duties and although a preliminary investigation report had been submitted on October 17, 2022, a unproductive labor cost of Rs. 3,047,473 had been paid as salaries up to the audit date of April 06, 2023 without a charge sheet being issued.
- (f) The following projects had happened to be stopped in middle due to the fact that projects were initiated without conducting formal pre-feasibility studies on issues such as the economic condition of the projects, how to get workers, and how to obtain funds.
 - i. The 03 projects, namely the development of a roofing tile weaving machine, the design and development of a coastal waste removal machine, and the design and development of a barge for removing waste from canals, were later stopped due to the inability to obtain funds. Although the estimate for the 03 projects was Rs. 11,500, 000 at the time of such stoppage, the actual cost was Rs. 5,674, 005 and the remaining funds were not available, as a result of that the projects had been stopped in middle.
 - ii. The 03 projects No. AE&MD/RES/10/2021 for the design modification and performance evaluation of the railway carriage for the transport of vegetables and fruits, No. ENED/RES/39/2022 for the development of sluice gates in Deduru Oya and No. N/MED/CRES//NHSL/30/2018 for the design of pneumatic piping systems for the transportation of clinical samples had been stopped in middle after incurring an expenditure of Rs. 1,734,795 out of the estimated cost of Rs. 2,954,000 by the end of the year under review.

- iii. The projects No. RED/RES/29/2020 on adaptive controlled smart office/smart buildings and No.N/MD/RES/85/2017-1/2018 on a security robot for real-time monitoring and capturing using android mobile - phase 2 have been stopped due to the departure of team officers of two projects and shortage of engineering staff, and an amount of Rs. 1,345,345 had been spent at the time of abandonment, exceeding the estimated cost of Rs. 1,140,000.
- iv. While a project to develop a cold storage system for farm-level fruits and vegetables at a minimum cost, bearing No. ENED/RES/41/2020-01, with an estimated cost of Rs. 2,900,000, was initiated in November 2020 and remained in place after spending Rs. 615,683, another project with the same objective, bearing No. ENED/RES/PD/35/2022, was initiated in February 2022 with an estimated cost of Rs. 4,000,000 and spending Rs. 538,579, without evaluating the future performance of the project, that project was also inactive at the time of inspection.

W.P.C. Wickramaratne
Auditor General



13.

**Observation of the Board
of Directors for the Report
of the Auditor General**

03. Actions taken on audit queries and rectifying errors indicated in audit reports

The corrective actions taken and clarification on the queries raised in the Auditor General report of year 2022 are as follows.

2. Report on other requirements of legal and directive**2.2.2 Non-compliance with Laws, Rules, Regulations and Management Decisions, etc.**

- (b) Section SLVIII 13.1 of Establishment code and Stated Administrative Circulars No.14/2014 and 18/2018 dated 30 May 2014 and 31 July 2018

Investigation committees were appointed and investigations were conducted without identifying any suspicion of misconduct or specific information regarding 6 officers including the Director General and Deputy Director General (Research and Development). Contrary to the circulars Rs.4,035,135 and Rs.1,170,209 were paid as allowances and for transportation facilities respectively.

Regarding the information received by the board of directors about the overall leadership of the institution, it has been decided to conduct an investigation at the ministerial level at the board meeting No. 01-1 Phase - 2022.01.25 and Phase 2 - 2022.01.27. Further to the direction given by then management of NERDC, the members of the investigation committee were provided with refreshments, up and down transport facilities from home to institution and stationary and other facilities.

- (b) Section XLVIII 31.1 of the Establishment Code of the Democratic Socialist Republic of Sri Lanka

The Deputy Director General (Research and Development) had been placed on compulsory leave from 07 June 2022 by the Chairman and the Board of Directors without being found guilty of misconduct. Without receiving his service, salary of Rs. 1,008,160 and legal fees of Rs. 75,000 were paid. These expenses became idle due to a court order issued against his reinstatement

The Engineer J A A D Jayasuriya, Deputy Director General (R&D) had been made compulsory retired for six months from 2022/06/07 by the BOD. He has been reinstated in the service from 2022/11/21 after his following the legal actions and then retired after following the public enterprise circular 2022/06 on 2022/12/31. Basic salary and other allowances entitled to him had been made as per the court order by now.

- (c) Paragraph 6.6 of the Operational Guidelines Manual for the State Owned Enterprises No. 01/2022 dated 16th November 2022

A copy of the draft annual report should be submitted to the Auditor General's within sixty (60) days after the close of the financial year. However, it was not submitted even by 10 May 2023, the date of the audit.

After preparation of final accounts, the preparation of annual report of the year 2022 has been in progress at present and will be forwarded at the earliest. Specially, the existing barriers for recruitment for the vacant executive posts in the institution have caused this delay.

3. Other Matters

- (a) Capital grants allocated for capital expenses must be expended within the relevant year. Any remaining amount should be disclosed along with the expected expenses. However, in the year under review and previous years, an amount of Rs.8,551,327 remained from the capital grants given to the institution, and the expected expenses from that amount were not disclosed.

When there were delays in receiving the capital allocation, the unutilized capital allocation in the previous year was used to address urgent requirements in research activities. By doing this, it was possible to efficiently drive many research projects toward the expected outcomes.

- (b) During the year under review, the IT department purchased a “Hardware Firewall Watch Guard Firebox 290” unit at a cost of Rs.2,217,600. The company’s average monthly Mbps requirement was stated as 40Mbps, while the monthly capacity of the firewall device mentioned above is 5.5 Gbps (5500 Mbps). Accordingly, the device that was purchased has a capacity of 5460 Mbps, which exceeds that monthly requirement of the institution. The previously used device, also provided by the same supplier, was in use from 2016 to 2022. The new firewall system, provided in 2022, was manufactured in 2022. Hence, this system is expected to be replaced in or around 2029. Therefore, it is not anticipated that the use of this network system will increase by capacity of 5460Mbps in the next six years. It was observed that an unnecessary amount of money has been spent on a device with a capacity exceeding the required amount, as mentioned above.

The number of authorized users (authenticated users) is important when choosing a firewall. At that time almost 300 employees were working in our company and it will increase with new recruitments in the coming years, taking into account the number of users applied as 500. The classification of firewalls for sale in this country varies according to the number of users. It varies from 200-1, 500-200, 2500-500, 2500~. According to this, the maximum capacity (throughput) of the firewall also changes. Also, the capacity varies according to the security features here. And new equipment of all these types are produced in a common way with high capacity.

Although our company has obtained a very low speed Internet connection compared to the number of employees, in order to meet the required number of users as well as to meet the minimum level of required security features, the lowest core bid has been selected and purchased according to the submitted specifications. The manufacturer has not informed that the license for this device will be withdrawn in the next 6 years (2029)

- (c) The inventory includes 14 high-tech machines with a total capacity of Rs.103,423,406. Additionally, there is a machine valued at Rs.13,250,000 which was not initially recorded in the fixed asset register. Its acquisition was prompted by the pressing demand for services in the technology incubator sector to bolster the local industry. Another unidentified machine within the inventory has remained inactive or underutilized.

In 2018, the establishment of the Technology Incubator Division aimed to provide crucial support for innovators in our country. In 2018, collaboration with the Inventors’ Commission led to the arrangement of essential services for inventors. The machinery was utilized according to the requirements. Providing a clear answer is challenging since the specific machines for which the provision is intended are not identified. However as indicated in the question, no machines were identified as idle, underutilized, or misused.

- (d) In July 2001, a CNC Milling Machine with a 2,500 KG capacity was acquired under the Asian Development Bank loan project for the value of Rs.26,488,211. In 2014 and 2015, it underwent repairs, including the purchase of accessories, at a cost of Rs.10,441,338. After completing the repairs, the Center procured another CNC Milling machine with a lower capacity (2,200 KG) in 2017 at a cost of Rs.26,150,497. Considering the limitations of the first machine, funds spent on purchasing another machine have been wasted.

The Technical Incubator Division, essential at that time, was established in collaboration with the Inventors' Commission 2017 to provide technical assistance to inventors. The Inventors Commission granted a CNC Milling Machine to the Incubator Division to support the provision of services. It was also considered that problems occasionally occurred with the 20-year-old CNC Milling Machine owned by the Incubator Division.

- (e) The Director Human Resource Management at the Centre was transferred to the Industrial Park without any assigned duties effective from 07 February 2022. The initial investigation report was submitted on 17th October 2022, and Rs. 3,047,473 was paid as salary up to 06 April 2023 without submitting indictment sheets, resulting in idle labour costs.

Because an investigation of the entire staff of the institution has been in progress, the Director (HR) had been transferred to the Technology Park from 07/02/2022 in order to conduct it with transparency. A charge sheet had been issued to this officer by the investigation committee. It was handed over to her as per the directives of the Board of Directors on 27/04/2023.

- (f) The following projects were halted midway because they were initiated without conducting pre-feasibility studies on crucial aspects such as project economy, employee recruitment, and fund availability.
- i. The following projects were halted midway because they were initiated without conducting pre-feasibility studies on crucial aspects such as project economy, employee recruitment, and fund availability. The estimated cost for those three projects were Rs. 11,500,000. However, at the time of suspension, the actual cost spent was Rs.5,674,005. Subsequently, the projects were halted midway due to the inability to secure funds.

This project has been started on a request of tile manufacturers association and the Ministry Of Industry and Commerce. The main objectives of it were to minimize the disadvantages of the conventional drying process of tiles such as, 20% wastage of tiles due to deformation, excess drying time in rainy season, unsafe working environment for workers etc. Because of the tile producers accepted the design prepared by NERDC, the dryer was installed in a tile factory selected by them. In the field trials by operating the dryer, it was observed and established the minimizing of the drying time and minimizing of the wastage due to deformation. A research paper was published on this performance. But was observed that in commercial operation of this dryer it is required to make improvements by mechanizing of feeding of racks with tiles in to the dryer, moving of racks in the dryer and taking out of racks from the dryer. For this purpose, Rs. 2.5 million was requested from the Ministry of Industry and Trade. Although the representatives of Tile Manufacturers Association made discussions with the secretary of the Ministry of Industry and Trade, the Ministry informed the inability of providing funds. Therefore, it was not possible to continue this projects.

- ii. Three projects AE&MD/RES/10/2022 Design Modification and Performance Evaluation of Railway Compartment for ENED/RES/39/2022 Investigation of Vibration, Application of Methods to Reduce Vibration, and implementing Remote Vibration Sensors (for the Redial Gates at Deduru Oya), and N/MED/CRES/NHSL/30/2018 Pneumatic Tubing System for Transport of Clinical Samples were halted midway. This occurred after incurring an expenditure of Rs.1,734,795 out of the estimated cost of Rs. 2,954, by the end of the year under review.

The 1st stage of the project of 'arrangements of train compartments for transporting vegetable and fruits' of No. AE & MD/RES/10/ 2022, was conducted by National Engineering Research and Development Centre (NERDC) and National Post Harvest Management Institute (NIPHM) according to a MOU between them. After designing the report was handed over to NIPHM. For this activity Rs. 1530.00 has spent for stationaries.

The preliminary studies of the project of Spill Gate Development of Daduru Oya were conducted under the project No. ENED/RES/39/2022, and it was decided to close the project in special meeting had at NERDC on 23/02/03, because of there had been no response from Government Factory for the MOU sent to them.

The preliminary research activities of the project of No. N/MED/CRES/NHSL/30/2018 were completed and the performances were conferred by developing prototype. Even though a report including the specifications, cost, details inclusive of implementation plan was forwarded to the hospital authorities, the project was closed as per the agreement of both parties, with the understanding that it was not possible to continue this project in the prevailed economic situation of the country.

- iii. Two projects namely the Adaptive Controlled Smart Office/Smart Building Project (RED/RES/29/2020) and a Security Robot for Real Time Monitoring and Capturing using Android Mobile – Phase 02 project (N/MD/RES/85/2017-1/2018), were abandoned midway due to the resignation of officers in the team and a shortage of engineering staff. An amount of Rs.1,345,345 had been spent, exceeding the estimated cost of Rs.1,140,000 at the time of abandonment.

The project of Smart Office/ Building of No. RED/RES/29/2020 closed because replacement after leaving the engineer in charge of this project. The item purchased for field testing of this project were used in an office of the institution and the other electronic and electrical components purchased, were handed over to the Department of Electrical and Electronic Engineering.

The 1st stage of this project of No. N/MD/RES/85/2017-1/2018, was completed as planned and the second stage was started as an extension of it. The Engineer left the institution at the second stage. The NERDC possess the achieved technology and the robot designs. It will be possible to use these technologies for the relevant R&D in future.

- iv. Estimated cost was Rs. 2,900,000 Project No.ENED/RE/41/2020-1, aimed at a development of a farmer-level cost-effective cold storage system for extending the shelf life of locally grown fruits and vegetables (Phase 2), was initiated in November 2020. However after expending Rs.615,683, the project is currently inactive. Without considering the future operation of the initial project, another project with the project number ENED/RES/PD/35/2022, sharing the same purpose, was initiated in February 2022 with an estimated cost of Rs.4,000,000. At the time of testing, this project is also currently inactive, having spent Rs.538,579.

The field trials of the project of cold storage system conducted under the number ENED/RES/01-2020/41, were done at the Institute of Post-Harvest Technology at Anuradhapura. According to the report issued by them, there were no issues in the quality of tomatoes and brinjols. While conducting minor developments in this cold room, on the request received from the Ministry of Tertiary Education, Research and Innovations and Skills Development for fabrication of another cold room similar to the one developed were imitated under the Number ENED/RES/PD/35/2022 with the approval from the Board of Directors.

In the meantime, due to finding some performance issues while testing different type of vegetables in the previous cold room conducted under the number ENED/RES/41/2020-01, the project of ENED/RES/PD/35/2022 stopped. The items purchased in this project were audited and it was decided to use these items in further development of Cold Room project.