

Annual Report 2013



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NATIONAL
SCIENCE
FOUNDATION

Chairman's message

It is my pleasure to present the National Science Foundation (NSF) Annual Report for 2013. The NSF has a great role to play in driving Science, Technology and Innovation (STI) towards socioeconomic development in the country. Under the direction of the Ministry of Technology and Research and mandated by the Science and Technology Development Act, No 11 of 1994, of the Democratic Socialist Republic of Sri Lanka the NSF facilitates research, development and innovation to create a knowledge based economy. According to the mandate we focus on facilitating capacity building, infrastructure development, technology transfer, knowledge creation and sharing in all fields of science and technology to improve the quality of life of the people. To achieve this, the NSF worked with various committees appointed with STI expertise and renowned scientists and I take great pleasure in thanking them for their services in the year 2013 and look forward to further fruitful endeavours in the coming years.

The great presence of the Foundation in the science and technology sector of this country is highlighted by the number of Scientists and technologists registered in the Science and Technology Management Information System database; as of 2013 a total of 5007 individuals were registered with 517 registering in 2013. In accordance with the above mandate and the number of registered participants it is apparent that NSF functions as a central institution for scientific data collection, analysis and interpretation. This information was utilised in vital decisions for the development of policies and strategies for the promotion of science, technology, research and industry in the country. An accumulation of data found in the National Research and Development Survey 2010, was published in 2013 as -"Sri Lanka Science, Technology and Innovation Statistical Handbook 2010".

In the year 2013, I am pleased to note that the NSF took steps to ensure that applied research projects received greater strategic importance in the foundation as opposed to theoretical research. This was based on the needs of the country at this hour, where research and innovation driven towards industry and economic development was placed at a higher importance. Coinciding with this, focus was placed on small and middle scaled industries, with large inputs to these sectors from the Foundation. Technology development, transfer and commercialization were noted imported areas for research support in 2013. Under this view grants were provided by the Foundation under two themes "Support for technology development" and "Support for start up business". The perceived main outcome of this venture was to encourage industry development, entrepreneurial development and ultimately contribute to the national economy. The foundation worked towards dissemination information and popularization of Science and Technology information.

National Thematic Research Programs (NTRP) that identified earlier was enhanced further by modifying and initiating the second program as Climate Change and Natural Disaster. The aim of this exercise was to promote collaborative multidisciplinary research in order to facilitate decision making with proper scientific base and an informed manner.

Development must take in to consideration the social development as a major area and the foundation took steps to enhance research in this sector in parallel with research in to pure science and technology development. The foundation strongly believe that Sri Lanka has a wealth of knowledge hidden and not put in to practice in the country and is being deteriorated and or lost with time. To overcome this and to enhance this knowledge the Foundation took initial steps to explore indigenous and traditional knowledge and practices in several sectors. The aim is to collect preserve and use these in an appropriate manner for the benefit of the country. Twelve key areas including sectors such as healthcare, food security, environment and agriculture have been already identified.

The NSF continued its role as the key institution responsible for uplifting and popularization of science in the general community and school children. In order to lay a strong foundation in science amongst school children the foundation in collaboration with the Ministry of Education held several programs. The World Science day 2013 schools program held in November carried an important theme for present times – Lifestyles and Health – attracting more than 1000 school children and teacher. The University Science Society (USS) program is another important activity initiated in 2013, established with the objective of

creating a platform for science undergraduates to build interest, work together and develop capacity for the development of the country.

Seminars, conferences and workshops organized by the NSF attracted a large number of personnel not only from all parts of Sri Lanka, but also from other parts of the world at regional and international level. The international conference on “Sri Lankans on the move” held in January 2013 was a great success and discussed all aspects social, economical, cultural and was based on the topic of international migration. There were many other local workshops that mainly helped the scientific community while keeping the society alert on currently important issues. With the conferences, seminars, lectures, workshops and press conferences on various topics some of which are uncommon attracted large numbers and it gave the foundation a chance to think afresh in to the future. We believe that this initiated a broad base participation of general public with NSF work and we hope to further enhance and continue these activities.

It was a pleasure apart from funding R & D activities through various schemes, the Foundation was able to sponsor the scientific community to participate and present their R&D work. With regards to the dissemination of scientific knowledge and R & D findings the Foundation continued the publication of two journals - Journal of the National Science Foundation of Sri Lanka (the only journal cited in the Science Citation Expanded) and Sri Lanka Journal of Social Sciences.

Signing a memorandum of understanding in November between the NSF and International Network for the availability of scientific Periodicals, UK to take over the administrative functions of Sri Lanka Journals Online (SLJOL) was another clear indication of the confidence placed on the Foundation at a national and international level. It must also be mentioned that NSF moved another step forward in 2013 by taking the lead on moving towards the Open Access (OA) to Research Information concept and already held a few workshop to discuss OA practices in Sri Lanka.

I thank all the staff of NSF who worked hard during the year to fulfill our obligation to the nation with our mandated responsibility. The foundation will look forward to serve our stake holders with enhanced capabilities in the future years.

I take this opportunity to thank the members of the Board of Management for their support, the Working Committees, Advisory Boards and the Panels for their dedicated service throughout the year.

Prof. W.L. Sumathipala
B.Sc (Phy) (Cey), M.S, Ph.D (Meteorology) (Hawaii), FIP, CPhys

Director General's Report

This report focuses on the performance of National Science Foundation, during the financial year ended on 31.12.2013.

Financial Overview

NSF had to adapt to harsh conditions when there are delays in releasing funds from the government. Human resource limitation made an inconvenient situation for monitoring the ongoing grants.

Achieving the Objectives

Effective and efficient measures were taken to accomplish the organizational objectives. As a leading RD&I funding organization with improved governance, management and competent scientific, administrative, technical and support staff NSF contributed to promote research & development (R&D) activities in the country for the national development. It also to some level facilitated technology development, transfer and commercialization. It engaged in collecting and disseminating STI information, popularizing STI amongst general public and liaising of STI community both local and overseas.

Facilitate Research

Main aim is to support RD&I, which addresses national development needs and enhance quality of RD&I undertaken by National Research & Innovation System (NRIS). A total of 141 applications under eight research areas were received in response to the Call for proposals and 92 applications that satisfied the NSF criteria were processed according to the NSF approved procedure. A total of 15 grants awarded through the Completeive Research Grants Scheme were completed in 2013. Overall expenditure for competitive research grants during the year was LKR 72.985 M.

14 papers were published in local, international, and indexed journals. 15 Research Students have registered for postgraduate degrees and 15 postgraduate degrees were completed. Funds for ongoing grants as well as new grants awarded have been kept in abeyance (some from August 2013) due to persisting financial constraints. This has significantly reduced the expenditure on RDI activities.

National Thematic Research Programme (NTRP)

National Thematic Research Programme is intended to promote multidisciplinary collaborative research that would address the national needs of the country and contribute to the national development. Food Security, Water Security, Climate Change & Natural Disasters and Energy Security were identified as priority areas. In year 2013, two new grants were awarded and 07 projects were being continued with good progress, under the Food Security theme.

Support Scheme for Supervision of Research Degrees (SUSRED)

SUSRED was initiated to motivate, support and recognize the scientists/engineers engaged in supervising students conducting research in the areas of Science and Technology leading to postgraduate research degrees. Nine SUSRED grants were awarded during the year.

Technology and Entrepreneurial development

Grants were given under the two themes of 'Support for technology development' and 'Support for start-up business'. Main outcome of these two schemes is to pave the way for industry development in the country and contribute to the national economy. Eleven grants were awarded under these schemes.

As an output of Technology Grants completed during the year, a diesel fuel pump test bench completed with improved quality and was ready for commercialization. There were 12 ongoing Technology Grants which are having tangible outputs at the end of the year.

Intellectual Property (IP) Awareness

This scheme is basically for increasing the awareness on IP education in the universities. Nine inventors and researchers were provided consultancy for patent filling.

Communicating Science

Main aim is to popularize Science Technology and Innovation amongst general public and school children and incorporate S&T in to their routine lifestyles. Series of programmes were carried out namely School Science Society Programmes, publication of series of books and magazines ('Vidurava Science Magazine', 'Vidya' Newsletter') to disseminate and promote scientific knowledge among the school community and the general public. Science camps and workshops were also conducted to disseminate and create a knowledge driven school system. The number of new school science societies registered with NSF was forty one (41). Production of five video programmes on different topics for the 'Mihimandala' 2nd phase was in progress. Journal of National Science foundation is the only one journal currently indexed in the Thomson Reuters databases. In order to increase the visibility this journal was uploaded on the Web. Organized one seminar on "Open Access Training" within the year.

International Collaboration

International coordination in Science and technology was continued awarding 43 NSF travel grants and providing opportunities to Sri Lankan scientists to present their research findings at international programs or to acquire scientific knowledge on new developments. Overseas Special Training Programme (OSTP) is to enhance national capacities in science technology and innovation by providing opportunities for training in advance laboratory and research centers of excellence. 19 OSTP grants were provided during the year. Eight partnerships were created from the Global Forum empowering Sri Lanka through networking and knowledge sharing. Many expatriates, foreign scientists, local scientists, policy makers and stakeholders from both public and private sector shared their knowledge for the betterment of science and technology in the country and to improve the national economy.

Science and Technology policy Research

As mandated the Science and Technology Policy Research Division (STPRD) provides a central clearing house for the collection, interpretation and analysis of data on scientific subjects and provides this vital information of the required subjects to the policy makers, researchers and stakeholders national wide in order to facilitate national policies and strategies in promoting ST&I in the country. Based on National Research and Development Survey 2010, the Division published " *Sri Lanka Science, Technology and Innovation Statistical Handbook 2010*" during 2013. The Science and Technology Management Information System (STMIS) maintained on Science and Technology sector of the country, which is a computerized information system that registered 517 Scientists and Technologists in 2013 increasing the total number of the registered scientific community up to 5007.

Fulfilling the Information Needs

The National Science Library & Resources Centre is mandated to cater to the information needs of the research and academic community to promote research and higher education in the country. Several strategies were introduced and adopted during the year to cater to the changing needs of the users.

Digital Library: The NSF Digital Library was expanded to provide online access to the full text of over 85% of the documents in the local literature collection maintained at the NSF.

National Digitization project: Phase one of the National Digitization project (NDP) was completed recording a major landmark in the history of dissemination of scholarly literature in Sri Lanka. Digitization and online uploading of scholarly local literature in eight leading libraries in the country were facilitated during the year.

Open Access to Research Information: The new concept of 'Open Access to Research Information' was introduced to the research community through a seminar organized in collaboration with Scholarly Publishing and Academic Resources Coalition (SPARC). OA implies a radical transformation in the methods of dissemination of public funded research information.

Tool to measure usage statistics of databases: The longstanding need of a mechanism to measure usage statistics of NSLRC resources was fulfilled with the incorporation of a sophisticated statistical analytical tool.

NSLRC Web site: The NSLRC web page was redesigned and strengthened with more links to free international scholarly resources. A range of high impact Open Access Journals and Institutional Repositories were linked to the site.

Improved governance, management, procedures and have a competent scientific administrative, technical and support staff

IT Integration

Completed 80% of the IT integration on scheduled time frame. This is to improve working environment by improving processes/procedures of NSF. This will integrate NSF activities and will be able to make, a planned effort for storage and retrieval of information easily at necessary times.

Quality management System

Continued the processes in the goal of obtaining certification for ISO 9001: 2008 quality management system for the NSF. Hence, Standard Operational Procedures were revised at divisional level. Main aim is to standardize all the tasks, procedures, processes of NSF in order to give a quality and timely service to its stakeholders.

Competent scientific administrative, technical and support staff

The staff represented NSF at 36 local and 08 foreign meetings/workshops /seminars. These opportunities were provided to the Staff for upgrading their competencies and to improve managerial and technical competencies of staff. It is obvious that a competent human resource pool is giving a vigor to the Foundation to progress forward.

Balanced Score Card

This is to Identify, develop and establish standards and annual targets and road maps for each Division and NSF (overall) to achieve identified targets. Objectives of this BSC approach are to carry out NSF activities according to the NSF Mandate, to provide a quality service for NSF stakeholders meeting their expectations satisfactorily, to measure individual and organizational performance effectively, and to achieve accurate and efficient workforce. Hence, initial actions were taken during the year by defining Key Performance Indicators at individual level and to the whole organization focusing on Customer, Internal processes, Employees and Financial aspects.

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OVERVIEW

The National Science Foundation (NSF) was established in 1998 by the Science and Technology Development Act No. 11 of 1994 as the successor to the Natural Resources Energy & Science Authority of Sri Lanka (NARESA). NARESA was established in 1981 as the successor to the National Science Council (NSC) set up in 1968. In 2008, NSF celebrated the 40 years of dedicated services to Science and Technology in Sri Lanka. The National Science Foundation is presently operating under the purview of the Ministry of Technology and Research (MoTR).

VALUES

While upholding the two principles: universality of science and the freedom in the pursuit of knowledge, the NSF is committed to observe and uphold the freedom of scientists, as individuals, to communicate and associate with other scientists, globally, in the furtherance of their science without discrimination on the grounds other than scientific merit. Furthermore, in pursuing its objectives in respect of the rights and responsibilities of scientists, the NSF opposes any discrimination based on age, ethnic origin, gender, language, physical disability, political stance and religion.

VISION

“To be the nation’s premier driving force in promoting Science, Technology & Innovation for economic and social prosperity of Sri Lanka”

MISSION

Initiate, facilitate and support research, development, innovations and technology transfer through funding, knowledge creation, capacity building, partnerships, information dissemination and popularizing science so as to;

- create a knowledge driven society and economy, efficiently and effectively, and
- contribute to improve the quality of life and standard of living of our people,

whilst nurturing a competent staff and ensuring transparency, accountability, fairness, equity and principles of sustainability.

MANDATE

The NSF is mandated for functions as specified in the Science and Technology Development Act No. 11 of 1994 as follows:

- To initiate, facilitate and support basic and applied scientific research by universities, science and technology institutions and scientists, with a view to:
 - a. Strengthening scientific research potential, including research in the social science, and science education programmes
 - b. Developing the natural resources of Sri Lanka
 - c. Promoting the welfare of the people of Sri Lanka
 - d. Training research personnel in science and technology
- To foster the interchange of scientific information among scientists in Sri Lanka and abroad.
- To award scholarships and fellowships for scientific study or scientific work at recognized science and technology institutions
- To maintain a current register of scientific and technical personnel, and in other ways to provide a central clearing house for the collection, interpretation and analysis of data, on the availability of, and the current and projected need for, scientific and technical resources in Sri Lanka, and to provide a source of information for policy formulation on science, technology and other fields.

- To popularize science amongst the people by funding and executing programmes for the purpose.

Accordingly, five goals are designed to encompass major aspects of the NSF Mandate and the sixth goal is designed to improve the capacity of the NSF so as to function as a premiere S&T organization in the country and discharge its duties and functions as assigned by the Act No. 11 of 1994 of the Democratic Socialist Republic of Sri Lanka.

STRATEGIC GOALS

- Goal 1: To be the premier organization to promote RD&I, S&T capacity building and be a partner in promoting natural resources conservation and utilization for sustainable development of the country
- Goal 2: To be the leader in facilitation of technology development and transfer and to emerge as the eminent catalyst for RD&I commercialization
- Goal 3: To be the focal point to collect, collate, analyze, interpret, store, disseminate and provide access to STI information
- Goal 4: To be the leader in popularization of STI amongst general public and partner in promoting science education
- Goal 5: To be the key gateway for the international liaison of STI community
- Goal 6: To be the leading RD&I funding organization with improved governance, management and competent scientific, administrative, technical and support staff

ORGANIZATIONAL STRUCTURE

The Chairman heads the Board of Management (BoM) of the National Science Foundation. The Director is the Chief Executive Officer. Five out of Six Scientific Divisions are headed by a Principal / Senior Scientific Officer while the National Science Library and Resource Centre (NSLRC) is headed by a Principal Information Officer. The Scientific Divisions are to report to the Additional Director.

Administration and Finance Divisions are responsible for the general administration and financial affairs at the Foundation.

Scientific Officers and other Support Staff assist in the scientific and associated functions of the Divisions. Internal Auditing, Printing and the Information Technology activities are handled by the staff of the respective Units.

Research Assistants, Technical Assistants and Consultants are hired on *ad hoc* and need basis to carry out specialized tasks and assignments as required by the BoM.

BOARD OF MANAGEMENT OF NSF

The NSF is governed by a Board of Management, which consists of the Chairman; the Director; a member each representing the University Grants Commission (UGC), the Sri Lanka Association for the Advancement of Science (SLAAS), The Institute of Engineers of Sri Lanka (IESL), The National Institute of Education (NIE), and the Ministry of Finance and four other members appointed by the Honourable Minister of Technology & Research.

Board of Management served from 8th July 2013

Prof. W.L. Sumathipala - From 8th July 2013

(Chairman)

National Science Foundation,
47/5, Maitland Place, Colombo 7.
chm@nsf.ac.lk

Ms Anusha Amarasinghe - From 01st February 2012

Director

National Science Foundation,
47/5, Maitland Place, Colombo 7.
dir@nsf.ac.lk

Prof. Ranjith Senarathne - From 7th September 2013

Vice Chairman

University Grant Commission
No. 20, Ward Place
Colombo 07.
ransen.ru@gamil.com

Prof. L.L. Rathnayake - From 14th September 2013

23/135, Diyawanna Gardens
Chandra Silva Mawatha
Nugegoda

Prof. D.G. Harendra de Silva - From 8th July 2013

25, Elias Place
Colombo 09.
harendra51@gmail.com

Prof. K.A.D.D.D. Jayasuriya - From 8th July 2013

Deptment of Physics
Faculty of Science
University of Kelaniya.
kdj@kln.ac.lk

Porf. P.R.T. Cumararatunga - From 6th October 2013

General President
SLAAS
Vidya Mandiraya
120/10, Wijerama Mw
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ruchira@fish.ruh.ac.lk
ruchiracum@gmail.com

Prof. B.T.D.N.K. de Silva - From 8th July 2013

Department of Zoology
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University of Sri Jayawardenepura
Nugegoda.
nissankakolitha@gmail.com

Dr. C. Mahesh Edirisinghe - From 8th July 2013

Department of Physics
Faculty of Science
University of Colombo
Colombo 03.
cmedirisinghe@gmail.com

Mr. M. F. S. P. Jayawardene - From 1st September 2013

Additional Director General
National Institute of Education
Maharagama.
sjayawardene@hotmail.com

Mr. P.M.K. Hettiarachchi - From 30th July 2013

Deputy Director
Department of Development Finance
Ministry Finance & Planning
Colombo 09.
manjulap@dfd.treasury.gov.lk

Board of Management served until 7th July 2013

Prof. Sirimali Fernando – Till July 7th 2013

Chairperson
National Science Foundation
47/5 Maitland Place
Colombo 7.
chm@nsf.ac.lk

Prof. Uma Coomaraswamy – Till 7th July 2013

Emeritus Professor of Botany
The Open University of Sri Lanka
Nawala
Nugegoda.

Deshabandu Prof. Tuley D. De Silva – Till 7th July 2013

Special Technical Advisor, UNIDO, Vienna
Visiting Professor
University of Sri Jayawardenepura
Nugegoda.

Eng. Ananda Hettiarachchy – Till 7th July 2013

Managing Consultant
P&E Consultants, 306/38
Bird Park Road
Off Thalawathugoda Road
Madiwela.

Prof. Jayantha Wijeyaratne – Till 13th September 2013

Professor of Zoology
University of Kelaniya
Kelaniya
Representative of SLAAS.

Prof. A.K.W. Jayawardane – Till 13th September 2013

Vice Chancellor
University of Moratuwa
Katubeddha
Moratuwa.
Representative of IESL.

Prof. Harischandra Abeygunawardena -Till 7th July 2013

Member/University Grants Commission
Faculty of Veterinary Medicine & Animal Science
University of Peradeniya
Peradeniya
Representative of UGC.

Mr A. Galhena – Till 7th July 2013

Deputy Director
Department of Treasury Operations
General Treasury.
Colombo 01
Representative of the General Treasury.

NSF COMMITTEES

The NSF has established one National Committee, two Steering Committees and 17 Working Committees with a view to meet the requirements stated in the Science Technology Development Act No.11 of 1994 and to align with the National Science and Technology Policy for Sri Lanka. The members of the Committees have been selected according to their expertise in the relevant field. The main responsibility of the above Committees is to advise the Board of Management (BoM) on development and implementation of its plans and programmes based on the NSF Mandate while ensuring alignment with the National Science and Technology Policy of Sri Lanka with an orientation towards national development objectives.

NSF National Committee:

- National Committee on Man and Biosphere (MAB)

NSF Steering Committee:

- Steering Committee on Climate Change & Natural Disasters
- Steering Committee on Food Security

NSF Working Committees:

- Working Committee on Basic Sciences
- Working Committee on Biotechnology & Bioethics
- Working Committee on Agriculture & Food Sciences

- Working Committee on Oceanography & Marine Resources
- Working Committee on Health Sciences
- Working Committee on Environment & Biodiversity
- Working Committee on Engineering, Architecture and ICT
- Working Committee on UNESCO Participation Programme
- Working Committee on Social Sciences
- Working Committee on Science & Technology Policy Research
- Working Committee on Indigenous Knowledge
- Working Committee on Technology
- Working Committee on International Liaison
- Working Committee on Science, Mathematics and Engineering Education
- Working Committee on Science Popularization
- Working Committee on Library & Information Sciences

Special Committees:

- Research Advisory Board
- Editorial Board – Journal of National Science Foundation of Sri Lanka
- Editorial Board – Sri Lanka Journal of Social Sciences

DIVISIONS OF NSF

Scientific Divisions

- Research Division (RD)
- Technology Division (TD)
- Science and Technology Policy Research Division (STPRD)
- Science Popularization Division (SPD)
- International Liaison Division (ILD)
- National Science Library and Resource Centre (NSLRC)

Supporting Divisions / Units

- Administration Division
- Finance Division
- IT Unit
- Printing Unit
- Internal Audit Unit

HIGHLIGHTS 2013

- A total of 15 grants awarded through the Competitive Research Grants Scheme were completed in 2013.
- Fifteen (15) research students registered for postgraduate degrees and 15 postgraduate degrees were completed.
- Equipment and Spare Parts Grants scheme awarded, seven (07) equipment grants worth LKR 9.13 M have been awarded in 2013.
- NSF Research Scholarship scheme that provides the financial support to science and engineering graduates to conduct fulltime research (within Sri Lanka) leading to MPhils and PhDs and under this scheme six (06) research scholarships were awarded in 2013,
- Three (03) Awards and five (05) Commendation Certificates were awarded at the NSF Research Awards Ceremony of 2013.
- Nine (09) research supervisory teams were granted the SUSRED (Support Scheme for Supervision of Research Degrees) Awards for MPhil degrees completed during 2011 and 2012.
- At the Third World Academy of Sciences/ National Science Foundation (TWAS/ NSF) Young Scientist Award Ceremony, two (02) winners were awarded in the respective fields of Biology and Chemistry.
- The UNESCO Participation Programme for Farmer community awareness on Integrated Water Resources Management was initiated.
- Funds for 07 projects in the area of food security were distributed, under National Thematic Research Programme (NTRP).
- Eleven Technology Grants were approved and 10 grants were awarded in 2013 and an “Orientation Seminar for Grantees” – for Technology Grants recipients was held on 10th October, 2013.
- A Workshop on “Effective Proposal Writing” was held on 16th January and on 19th December, 2013 at the NSF Auditorium with a view to support prospective applicants to formulate good quality proposals according to the NSF prescribed format.
- One (01) technology grant was completed in 2013, which developed the diesel fuel pump test bench with AC inverter as import substitute to test fuel injector pump efficiency of diesel engines. The product is now ready for commercialization and ready to sell at a competitive price enabling saving foreign exchange.
- Prototypes/ models and posters of grant products were displayed at the “Technology Market Place” exhibition held in 14- 15 December, 2013, which was organized by the Ministry of Technology and Research. During the exhibition, stakeholders were made aware about technology grant products and also inquiries were received about the same.
- An expert team was appointed and assigned to formulate a policy for developing university-industry institute industry partnerships (UIIP) and two draft policies prepared were transferred to NASTEC as per the Ministry directive.
- A two year project entitled “Developing a regulatory framework for nanotechnology related activities in Sri Lanka” funded by International Development Research Centre (IDRC), Canada, which was the Sri Lankan component of the regional project titled “Nanotechnology in South Asia – Building Capabilities and Governing the Technology” was completed and the final report was submitted in May 2013. The regional project was jointly implemented by Sri Lanka (National Science Foundation), India (The Energy and Resources Institute) and Pakistan (Preston University).
- Based on the analysis of data and other related information collected by the National R&D Survey 2010, the indicators of Science, Technology and Innovation were developed and the book entitled

“Sri Lanka Science, Technology and Innovation Statistical Handbook 2010” was published in May 2013.

- A Case study on the Rattan (Cane) based Industry conducted under SME cluster study series was completed in 2013 and a Technical Report highlighting the policy recommendations on the development and sustainability of the small and medium enterprises of cane industry was made available.
- An International Conference on “Migration: Sri Lankans on the Move” was held from 23-25 January 2013 at the Kingsbury Hotel, Colombo from 23-25, January 2013.
- A study on impact assessment of Equipment Grants awarded by the NSF during 2007-2011 was undertaken in 2012 and the final report was produced highlighting the policy recommendations to improve NSF equipment grant scheme.
- A workshop on “Revisiting Traditional Knowledge” organized by the NSF in collaboration with the Expert Study Group on Scientific Basis of Traditional Knowledge appointed by the National Science and Technology Commission (NASTEC) was held on the August 27, 2013 at the NSF Auditorium.
- The second phase of the award winning (National & International) “Mihimandala” NSF Science Magazine on TV was started with an aim of producing 15 video programmes (20 minutes long) in all three languages on current scientific issues.
- Registered 41 new School Science Societies under the School Science Society Programme.
- Seven (07) satellite programmes; first round competitions (Kandy, Kegalle, Galle, Kurunegala, Colombo, Jaffna, and Batticaloa) were conducted for the first time of the history of the school science society competitions.
- A Mini Exhibition on “Healthy Lifestyle” was organized on the same day of the World Science Day Programme for the first time of the history of celebrating the World Science Day Schools Programme since 2004.
- NSF University Science Society Programme was established and registered 31 University Science Societies under this Programme.
- Four (04) ‘Subarathi’ programmes were arranged with the Sri Lanka Broadcasting Corporation, on currently important topics.
- The Vidurava Science Magazine was published and distributed free of charge to the School Science Societies registered with the NSF, Vidatha Centres, University Science Libraries, and Provincial Science Coordinators & Zonal Science Directors.
- Based on the recommendations made at the Global Forum held in Sri Lanka, twenty five (25) projects were initiated, and out of them eight projects have been completed.
- A Memorandum of Understanding (MoU) was prepared to be signed between the Pakistan Science Foundation and the NSF, which will provide an opportunity for local scientists/ technologists to obtain expertise and establish collaborative activities in various fields of Science and Technology as well as in popularization of science.
- The international collaboration programme in Science and Technology was continued. Forty three (43) travel grants were awarded to Sri Lankan scientists to present their research findings at international fora and to acquire knowledge on latest developments.
- Nineteen (19) grants were awarded under the Overseas Special Training Programme (OSTP) to enhance national capacities in Science, Technology and Innovation by providing opportunities for training at centres of excellence abroad in areas where such training facilities are not available in the country.
- Three (03) grants were awarded under the International Partnerships for Science and Technology (IPSAT) scheme to obtain services of high caliber scientists and technologists working abroad.

- By the end of 2013, the total number of scientists and technologists registered in the Science and Technology Management Information System (STMIS) was 4,452.
- Sri Lanka Science Index (SLSI) full text digital library: The NSLRC Digital Library was expanded providing online access to the full text of over 85% of the documents in the SLSI database.
- National Digitization project: Phase one of the National Digitization project (NDP) was completed recording a major landmark in the history of dissemination of scholarly literature in Sri Lanka. Digitization and online uploading of scholarly local literature in eight leading libraries in the country were facilitated during the year.
- Sri Lanka Journals Online Database (SLJOL): The administrative responsibilities of the Sri Lanka Journals Online (SLJOL) database, the online platform for publishing peer reviewed scholarly journals of Sri Lanka was officially handed over to the NSF by INASP (*International Network for the Availability of Scientific Periodicals*), UK on 21 November.
- Seminar on Open Access to Research Information: A seminar under the title “Open Access to Research Information” was organized in collaboration with the Scholarly Publishing and Academic Resources Coalition (SPARC) with a view to introduce the Open Access concept to public funded research outputs. OA implies a radical transformation in the methods of dissemination of research information.
- Tool to measure usage statistics of databases: The longstanding need of a mechanism to measure usage statistics of NSLRC resources was fulfilled with the incorporation of a sophisticated statistical analytical tool.
- *NSLRC Web site*: The NSLRC web page was redesigned and strengthened with more links to free international scholarly resources. A range of high impact Open Access Journals and Institutional Repositories were linked to the site.
- Four (04) issues of the Journal of the National Science Foundation of Sri Lanka was published in March, June, September and December respectively (Volume 41).

RESEARCH, DEVELOPMENT
& INNOVATION (RD&I) AND
TECHNOLOGY TRANSFER



NSF Competitive Research Grants Scheme

The NSF Competitive Research Grants Scheme intends to provide assistance to supplement the financial, physical and manpower resources available in the S & T Institutions in Sri Lanka for scientific research by supporting basic and applied scientific research. It facilitates to harness independent, individual and intellectual capacity of scientists and encourages them to carry out research of high standard, directed towards socio-economic development of the country. The call of applications for Competitive Research Grants in all fields of Science & Technology was opened in September 2013.

An Effective Proposal Writing Workshop was held on 30 September 2013 at the NSF Auditorium with the participation of 105 prospective applicants to create awareness on submitting research proposals of high standard to the NSF Competitive Research Grants Scheme. Five presentations were made on various aspects of writing research proposals, at this workshop.

A total of 92 applications under eight research areas were received in response to the call for proposals and processed according to the NSF approved procedure. Funds were released for 114 ongoing grants. During the year, three Progress Review Seminars and one field visit of ongoing research grants were held. A total of 15 grants awarded through the Competitive Research Grants Scheme were completed in 2013. Details of grants completed in 2013 are given in Annex 1. During the year, 15 research students have registered for postgraduate degrees and 15 postgraduate degrees were completed. The status of Competitive Research Grants as at 31.12.2013 is given in Annex 2.

Highlights of Completed Grants

Grant No.	: RG/2007/BT/03
Project Title	: Determination of drug resistant gene mutations among Rifampicin resistant strains of <i>M. tuberculosis</i>
Grantees	: Prof. Jennifer Perera, Dept. of Microbiology, Dr. W. S. S. Wijesundera, Dept. of Biochemistry & Molecular Biology, Faculty of Medicine, University of Colombo

The study was carried out with the objectives of identifying the rifampicin resistant gene mutations, developing a rapid molecular method for determination of rifampicin resistance and determining the

molecular epidemiology of rifampicin resistance in the Western Province. The study developed a simple, inexpensive, rapid and sensitive PCR-ELISA method to determine rifampicin resistance. The study also showed that the rifampicin resistant Mycobacterium strains in Sri Lanka does not belong to a single clone and represent epidemiologically different strains. Further it also reported the presence of high frequency of new mutations that emphasizes the need for expanding the geographical database of mutations for effective diagnosis.

Grant No. : RG/2007/BT/04

Project Title : Identification of Drought Resistant Varieties in Rice (Oryza sativa L.) using Physiological and Molecular Methods

Grantees : Prof. W.A.J.M. De Costa, Dept. of Crop Science,
Dr. Devika M. De Costa, Dept. of Agricultural Biology
Faculty of Agriculture, University of Peradeniya

The project aimed at identifying drought resistant rice varieties from Sri Lankan rice germplasm and to identify candidate genes that are responsible for drought tolerance. The study identified relatively drought-tolerant, high-yielding Sri Lankan rice variety, Bg358, which can be used as a source of genes for drought tolerance.

Grant No. : RG/2007/BT/09

Project Title : Light regulated development in plants – Translational research in rice (Oriza sativa)

Grantees : Dr. G.H.C.M. Hettiarachchi,
Dept. of Chemistry, University of Colombo

The aim of this project was to translate and apply knowledge gained from studies of the weed (Arabidopsis thaliana) on rice to improve the quality and productivity by introducing Arabidopsis STH2 gene. STH2 protein can activate light dependent transcription and positively regulate light mediated development of plants. The study established the Agrobacterium mediated rice transformation protocol. Further, this study showed that light regulated over-expression of Arabidopsis STH2 gene in rice has considerable potential for modulation of plant architecture and increasing grain yield.

Grant No. : RG/2008/BS/02

Project Title : Exploring endolichenic fungi in Sri Lanka as novel sources of bioactive secondary metabolites

Grantees : Prof. P. A. Paranagama, Dept. of Chemistry
Dr. B. T. S. D. Kannangara, Dept. of Botany
University of Kelaniya

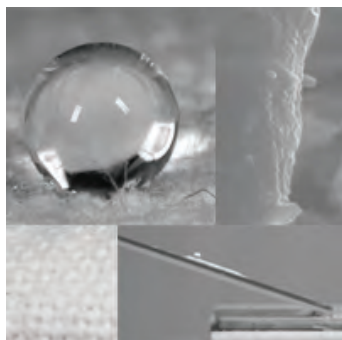
The project aimed at isolating and identifying endolichenic fungi associated with lichens in Sri Lanka, to search for bioactive constituents in isolated endolichenic fungi from the lichens and to evaluate bioactivity of the compounds. The project isolated 29 endolichenic fungal strains and identified. The strains were tested for antifungal and insecticidal activity. The strains, which showed the antifungal activity were subjected to bioassay guided fractionation and one bioactive compound with antifungal activity against Colletotricum musae was isolated.

Grant No. : RG/2009/NANO/01
Title : Development and characterization of functional textile materials with stain-resistant and antimicrobial activities
Grantees : Prof. R.M.G. Rajapakse, Department of Chemistry,
Dr. Sanath Rajapakse, Department of Molecular Biology and Biotechnology
University of Peradeniya

The objective of this project was to attach colloidal nanoparticles of titanium dioxide, zinc oxide, silver and silver oxide, onto textile materials in order to study antimicrobial and super-hydrophobic activities of modified textile materials.

The materials have shown excellent antibacterial properties [for *Escherichia coli*, *Staphylococcus aureus* and Methicillin Resistant *Staphylococcus aureus* (MRSA)] and antifungal properties for *Aspergillus niger* fungal colonies. The antimicrobial textiles can be used as wound disinfecting dressings, odorless garments such as socks and underwear and as self disinfecting clothes, particularly for those to be worn in operating theaters and intensive care units. Stain resistant garments have also been produced under this project and ultimately this will lead to introduction of garments that needs less frequent washings.

A collaboration was made with the “Intelligent Glove Solutions”, a leading advanced glove producing company situated in the Free Trade Zone, Katunayake, to develop antistatic and antimicrobial gloves for the export market. A Research Assistant funded by the company is pursuing research studies to develop such gloves.



Measurement of contact and roll off angles of water droplets on superhydrophobic cotton. A scanning electron microscopic image of ZnO particle attached cotton.

Grant No. : RG/2011//CSIT/01
Title : Ninithi Nano Studio Modelling and Simulation Software
Grantees : Dr. Srinath Perera
Mr. Chanaka Rupesinghe
Mr. Poshitha Dabare
Lanka Software Foundation

Ninithi Nano Studio is a Free and Open Source Software that is capable of emulating a nanotechnology laboratory in a computer simulated environment. The software will be targeted at scientists, students and researchers in the nanotechnology field, who can utilize the software to design and analyse new materials. The methodology utilized to reach these goals was to develop Ninithi Nano Studio as a Plugin based software system where new tools for nano technological simulation can be plugged in easily. Ninithi can be a very useful tool to nano technology researchers as it will enable them to simulate experiments instead of carrying out actual laboratory experiments which can be very expensive. Ninithi, with its modeling and simulation capabilities can become a very effective teaching aid.

Equipment Grants and Spare Parts Grants

Laboratories with modern infrastructure facilities are needed for research to be in par with the global S&T research. These schemes intend to assist the acquisition of equipment and spare parts for research equipment that is in general too costly to be purchased by the Research Institutions and Universities. Further, these schemes facilitate and support infrastructure development of research laboratories in order to create a sustainable research culture. Seven equipment grants worth LKR 9.13 M have been awarded in 2013. The details of these grants are given in Annex 3.

Research Scholarships

At present, there is very low output of postgraduate research degrees by the Sri Lankan Universities. It is important to attract and encourage science/ engineering graduates to conduct fulltime research leading to research degrees. This programme provides the financial support to science and engineering graduates to conduct fulltime research (within Sri Lanka) leading to MPhils and PhDs. Six research scholarships were awarded in 2013, details of which are given in Annex 4.

NSF Awards Ceremony 2013

The NSF Awards Ceremony 2013 was held on 02 July 2013 at the NSF to confer awards under three schemes of the NSF:

- NSF Research Awards
- Support Scheme for Supervision of Research Degrees (SUSRED)
- Third World Academy of Sciences (TWAS)/ NSF Young Scientist Award

The details of the award winners are given in Annex 5.

NSF Research Awards

The NSF Research Awards are given annually to researchers who have made outstanding contributions for the advancement of science through NSF funded research projects. The purpose of the award is to bestow on researchers the recognition they deserve for the contribution made for the advancement of science and thereby helping to achieve one of the main objectives of the National Science Foundation. The award is also meant to motivate recipients of competitive research grants to conscientiously maintain high standards of scientific research while at the same time helping them to enhance their own career prospects as recognized scientists.

Three NSF Research Awards and five Commendation Certificates were awarded at this year's Awards Ceremony.

Support Scheme for Supervision of Research Degrees (SUSRED)

The awards for the Support Scheme for Supervision of Research Degrees (SUSRED) was implemented in 2011 to motivate, support and recognize the scientists/engineers engaged in supervising postgraduate students conducting research in all areas of Science and Technology. This scheme will also encourage universities and research institutions to promote and facilitate postgraduate research training.

Nine supervisory teams were successful in securing SUSRED awards for MPhil degrees completed during 2011 and 2012.

Third World Academy of Sciences/ National Science Foundation (TWAS/ NSF) Young Scientist Award

Two winners Dr Gathsaurie Neelika Malavige and Dr Nilwala Kottegoda in the respective fields of Biology and Chemistry were awarded the TWAS/ NSF Young Scientist Award 2012 at the same ceremony.

Scientific Forum on Chronic Kidney Disease of uncertain aetiology (CKDu)

At the request of the World Health Organization (WHO) and the Ministry of Health, the NSF channelled funds for a multidisciplinary research programme to identify the causes of Chronic Kidney Disease of uncertain aetiology (CKDu). The research programme was completed and the Final Report was submitted to the NSF. The recommendations arising from this study will be disseminated.

A scientific forum was held at the NSF on 18 July 2013 with the participation of representatives of many public and private institutions including the Ministry of Health, Ministry of Environment and Renewable Energy, Department of Agriculture, Registrar of Pesticides, Central Environmental Authority etc. The Hon. Minister of Technology and Research, Hon. Patali Champaka Ranawaka and Mrs. Dhara Wijayaetilake, Secretary to the Ministry of Technology and Research were also present. The objectives of this forum were to discuss the research project on 'Investigation and Evaluation of Chronic Kidney Disease of Uncertain Aetiology in Sri Lanka' and to identify the way forward.

Dr F.R. Mehta, the Country Representative of the World Health Organization made a presentation which was followed by a discussion.

Agriculture Biotechnology Outreach Programme

An agricultural biotechnology programme was organized in collaboration with the US Embassy on 21 October 2013 at the NSF.

The objective of the programme was to discuss how biotechnology is being used as one of the tools to address food security issues, reduce chemical usage, climate change, low yields and productivity. Three resource persons, two foreign (from the National Institute of Nutrition, India and University of Iowa, USA) and one local, delivered lectures. 60 participants attended the programme.

The UNESCO Participation Programme - Farmer community awareness on Integrated Water Resources Management

A proposal titled Awareness and participation of stakeholders in practice of Integrated Water Resources Management with particular reference to the Farming Community was submitted to the UNESCO and the proposal was approved for funding. The objective of this Programme is to identify immediate, medium term and long term issues and identify socio-economically acceptable sustainable solutions to address them and to identify methods to improve water security, quality, quantity and secure access.

The expected output of this programme is to enhance knowledge and to educate the farmer community on integrated water resource management and to make them practice conservation of water. In order to achieve the above, it is planned to conduct workshops for the farmer communities in selected districts and to develop educational tools such as DVD's, CD's, brochures and booklets, for school children and educate them on integrated water resource management and water conservation.

The Working Committee on UNESCO Participation Programme identified Anuradhapura, Jaffna, Nuwara-Eliya, Moneragala districts to conduct workshops as they need much more attention with regard to Integrated Water Resources Management.

National Thematic Research Programme (NTRP)

The National Science Foundation (NSF) initiated a novel contract research programme named National Thematic Research Programme (NTRP), where the themes are decided as per the national priorities. The NSF has identified 'Food Security', 'Water Security', Climate Change and Natural Disasters' and 'Energy Security', as the priority areas to start with under the NTRP. 'Food Security' activities were initiated in 2012 and continued during year 2013.

NTRP Food Security

The Thematic Research Programme on Food Security was initiated to address major issues through research, related to the theme and with a view of ensuring food security of the nation. There are five research programmes that are multidisciplinary and collaborative in nature, which are expected to provide tangible positive impact on the food security of the country.

After extensive discussions and revisions to improve and fine-tune the proposals, seven projects were awarded under four Programmes in 2012 and funds were transferred in 2013.

The activities of Programme 2 - Development of Low cost sustainable post harvest operations for food - were completed and two new grants were awarded in 2013 Annex 06).

The research projects were being implemented through institutional partnerships, engagement of research institutions, government institutions and the private sector, which will facilitate the integration of information and knowledge in decision making. This will also facilitate the information and knowledge flow across different levels of the society without additional effort.

Some of the key activities carried-out during the year 2013 were: the Brain Storming Meeting to discuss the Programme 2, Stakeholder Meetings for identifying a possible collaboration to the projects of NTRP Food Security, Progress Discussions with project teams, and close monitoring of ongoing projects.

The activities carried-out during the year 2013

1. A meeting was held with the participation of project team members from University of Colombo School of Computing, Dr R M Herath from Hector Kobekaduwa Agrarian Research and Training Institute (HARTI) Dept. of Agriculture in January.
2. A Brain Storming Meeting to discuss the Programme 2 (Development of low cost sustainable post harvest operations for food) was held on 26th February 2013 at the NSF, with the participation of stakeholders representing the public and private sectors.
3. A stakeholder Meeting on project 1 “Development of a web-based crop forecasting system in Sri Lanka” was held in June 2013. Stakeholders from Ministry of Agriculture, Ministry of Economic Development, Department of Agrarian Services, University of Colombo School of Computing (UCSC) and Department of Census & Statistics attended the meeting.
4. A discussion with representatives from the Veterinary Research Institute (VRI) and Department of Animal Production & Health (DAPH) and a discussion on identifying a possible collaboration to the projects of NTRP Food Security was held in July.
5. A discussion was held with the project team from the ITI on the proposal submitted on Total Diet Study. The Steering Committee members as well as the external experts participated at this discussion.
6. Discussion was held with Prof. Jennifer Perera/Co-project leader, representatives from Ministry of Health (MoH) and representatives from Epidemiology Unit of Ministry of Health, on the project titled “Strengthening the national system for ensuring microbiological food safety”.
7. The Steering Committee on Food Security had discussions on the progress with the following project teams:
 - Project title: A Social Life Network to enable farmers to meet the varying food demands of the population, by providing needed information just in time and better monitoring and management of crop production
 - Project title: Development of web based crop forecasting system in Sri Lanka

- Project title: Assessment of internal and external trade policies and practices affecting Food Security in Sri Lanka and identifying areas for improvement

8. National Thematic Research Programme (NTRP) on Climate Change and Natural Disasters

The Steering Committee on Climate Change and Natural Disasters was appointed and the activities of this Thematic Research Programme were being planned to be implemented in 2014.



Technology Transfer

Technology Grant Schemes

- (a) Support for Technology Development
- (b) Support for Start-up Business based on new technologies

A Workshop on “Effective Proposal Writing” was held on 16th January, 2013 at the NSF Auditorium with a view to support prospective applicants to formulate good quality proposals according to the NSF prescribed format. There were 50 participants present at this workshop from the State and non State sector organizations as well at the individual capacity.

In response to Technology Grants advertisement published in December, 2012, thirty nine (39) applications were received in total. 31 applications were under the scheme “Support for Technology Development” and 08 were under the scheme “Support for Start- up Businesses based on new technologies”.

Grant applications were processed according to the approved NSF procedures.

Eleven Technology Grants were approved and 10 grants were awarded on 1st October, 2013 after signing the agreements between the grantees and the NSF.

An “Orientation Seminar for Grantees” – for Technology Grants recipients of 2013 was held on 10th October, 2013. All 11 project teams including team leaders, team members and collaborators participated at this seminar. The aim was to make aware the grantees on NSF grant operational procedure, project management and evaluation aiming at delivering outputs as planned, and protecting IP arising from the project work.

The second call for applications for 2013 was advertised on the 24th November 2013.

The workshop on “Effective proposal writing” was repeated on the 19th December, 2013 to assist prospective applicants in preparation of good quality project proposals.

Out of 17 on-going grants, 01 project was completed in year 2013.

Completed project with tangible output

Grant No. :TG/2011/Tech-D/01
Project Title :Quality improvement of Diesel Fuel Pump
Test Bench
Grantee :Mr Sarath Uyanhewa
Category :Individual
Allocation :LKR 402,640.00



The project was completed in July, 2013. The diesel fuel pump test bench with AC inverter was developed as import substitute to test fuel injector pump efficiency of diesel engines. The product is now ready for commercialization and ready to sell at a competitive price enabling saving foreign exchange.

On going Technology Grants

Grant No.: TG/2011/Tech-D/03
Project Title: COP Sayura : The three dimensional coastal surveillance system for Sri Lanka Navy High Command
Grantees: Prof. N.D. Kodikara, Rear Admiral
(L) K.R. Senadheera, Dr S.R.D. Rosa,
Mr Kapila Dias, Dr C.I. Keppetiyagama,
Mr K.D. Sandaruwan
Category: State Sector
Allocation: LKR 2,771,000.00



Cop Sayura is a visualization tool to depict the objects in the Sri Lankan territorial waters to enhance the decision making capabilities of relevant authorities. This visualization tool operated under 2D or 3D mode. Hence, there is a capability of three dimensional view, the movements of objects in strategic locations can be seen in real time. Sri Lanka Navy and the Ports Authority are two potential end users.

Grant No.: TG/2012/Tech-D/08
Project Title: Introducing of an energy efficient and environmentally friendly new technology to produce coconut shell charcoal
Grantees: Eng. Banduni Premaratne
Category: Non- State Sector
Allocation: LKR 1,536,689.00

This project was completed in September, 2013. A semi- automated coconut shell charcoal manufacturing unit with three inner chambers and one external chamber was developed and assembled at Pannala. The unit produces high quality charcoal (1000 Kg charcoal/24 hours per set), which could be used to manufacture activated carbon. Tar is also collected as a by-product. The unit is a solution to existing environmental and health problems associated with conventional charcoal manufacturing methods. The second unit was also installed at Warakapola, and more units are being manufactured for interested clients.

Grant No.: TG/2012/Tech-D/09
 Project Title: To grow the algae *Spirulina* to overcome malnutrition of children and pregnant and lactating mothers in villages in Sri Lanka
 Grantees: Swayang Wattegedara Limited
 Category: Non- state sector
 Allocation: LKR Rs. 1,500,000.00



The project is to cultivate *Spirulina* under farm conditions to support the villagers in Kurunegala to overcome malnutrition, provide training and limited employment opportunities to both village youth and women (part time basis) and to market *Spirulina* powder at an affordable price to villagers specially in the North Western Province.

Grant No.: TG/2012/Tech-D/11
 Project Title: Development of an Aloe vera (*Aloe barbadensis* Miller) incorporate ready to serve beverage
 Grantees: Prof. Ayanthi N. Navaratne
 Category : State sector
 Allocation: LKR Rs. 241,812.00

This ready to serve beverage is used as a preventive measure to overcome type 2 diabetes mellitus (T2DM)- a pandemic disease in Sri Lanka.

Grant No.: TG/2011/Tech-D/04
 Project Title: Develop an Ammonia-Water Diffusion Absorption Refrigeration System (DARS) driven by waste heat for food transportation applications
 Grantees : Mr. Nissanka Rajapaksa
 Category : Individual
 Allocation: LKR 739,700.00

A functional prototype of Ammonia-Water Diffusion Absorption Refrigeration System (DARS) is an energy efficient refrigeration system having 1-2 Kw cooling output. It is planned to utilize waste heat from vehicles as the input for operating the refrigeration system during transportation. The mechanism is to be used for food transportation minimizing the food waste.

Grant No.: TG/2011/Tech-D/02
 Project Title: Improvement and field testing of a solar powered lift and carry type milking machine
 Grantees: Dr K.S.P. Amaratunga and Dr K.F.T. Silva
 Category : State Sector
 Allocation: LKR 1,545,500.00



Improvements were made to the existing prototype milking machine in terms of durability of parts and vacuum mechanism. Teat cups and pulsation mechanism were also improved for easy production of

milk and less power consumption. The new model is compact and light in weight. The product is patent pending.

Grant No.: TG/2011/Start-Up/01
Project Title: Manufacture and marketing of cost effective, environmentally friendly cooking stoves for domestic and commercial cooking purposes
Grantees : Mr. Riyad Ismail
Category : Individual
Allocation: LKR 1,350,000.00

A Start-Up business to manufacture and market environmentally friendly stoves for domestic and commercial cooking purposes is being progressed. The stove will save up to 50% energy cost compared to use of LP gas. No toxic fumes are generated during cooking. Rural community engaged in pottery and charcoal industries are benefited.



Grant No.: TG/2012/Tech-D/02
Project Title: Scaling up the invention of spherical container for natural rubber latex industry
Grantees: Mr Sunil Somasiri Gomes
Category: Individual
Allocation: LKR 2,526, 519.04

The objective of the project was to fabricate a spherical latex container for rubber industry to eliminate material wastage from the point of tapping to centrifuging and transportation of centrifuge latex. A 21,000 L spherical latex container was fabricated and installed at Lalan Rubbers, Warakapola factory. Test runs are being conducted at the same place.

Grant No.: TG/2012/Tech-D/03
Project Title: Novel Accessible Technologies on Touchscreen Devices (NAT-TD)
Grantees: Dr Sohan Dharmarajah
Category: Individual
Allocation: LKR 861,770.00

Commercially viable user interface compatible with modern touch screen devices are being developed. This will enable the blind community to easily access mobile computing platforms. Blind users have limited access for modern touch screen devices because these devices are perfectly smooth. Blind users are unable to orient their fingers for typing. The tool available at present is not efficient and user friendly due to inconsistency in the interact process. The user is unable to perform daily tasks accurately fast enough. Output of this project is a user interface built based on a Virtual Braille Keyboard (VBK) that allows blind users to type on touchscreen devices. The VBK is essentially a dynamic keyboard, which changes the sizes and locations of the keys, to accommodate blind users with any typing orientation. VBK is also supported with tools such as Application Programming Interface (API) which provides an integral solution in such a manner that visually impaired people interact with touchscreen devices. With this solution, blind users can carry out functions such as e-mailing, note taking, preparing contact lists on modern touch screen devices fast and accurately.

Grant No.: TG/2012/Tech-D/05
Project Title: Development of a cost effective, user friendly and efficient single dryer for different types of natural rubber
Grantees : Dr Susantha Siriwardena
Category : State sector
Allocation : LKR 2, 367, 400.00

A single day dryer to dry different types of rubbers was designed and the fabrication is being done at the Horana Plantations, the industry partner of the project.

Grant No. : TG/2012/Tech-D/07
Project Title: Assessment of socio-- economic viability of simplified hydroponics to improve the household food production and to develop a strategy for commercialization
Grantees : Dr Susil Liyanaarachchi
Category : Individual
Allocation: LKR 593,950.00

The project aims to introduce simplified hydroponic as a resource efficient technology to grow vegetables for home consumption utilizing limited space available. Pilot study is being conducted to assess the social acceptance of this concept. Accordingly thirty numbers of hydroponic demonstration gardens were set up by individual households in Colombo and Kalutara districts, eight institutions and six government schools. Capsicum, chillies, brinjals, tomato, cabbage, etc. are grown in these gardens.

Grant No. : TG/2012/Start-Up/01
Project Title: Establishment of a business for manufacturing and marketing of an integrated solid state fan controller for speed and time regulation
Grantees : Prof. K. K. Y. W. Perera
Category : Individual
Allocation: LKR 2,891,000.00

A Start-Up business is being progressed to manufacture and market integrated solid state fan controllers for speed and time regulation. These controllers are used for energy saving. Prototype was developed under an NSF research grant. The product is a novel energy saving fan controller. It is hum-free, continuously variable speed cum time controller for ceiling fans. At present, there are no solid state timers which can be fitted with conventionally wired ceiling fans. This new product has been developed using micro power technologies to be used for domestic and institutional applications resulting considerable energy saving. Energy saving is achieved through three separate mechanisms. According to a study with a semi-formal group (sample product users), 50% energy saving is estimated. This product will enable users to reduce electricity bills and energy saving will contribute to the economy. Trial production is being done at Cherry Electronics (Pvt) Ltd., the industry collaborator.

Monitoring of ongoing technology Grants

27 progress monitoring field visits for ongoing technology grants were made to evaluate the ongoing progress.

Technology grant progress review seminar for ongoing grants was held on 11th December 2013.

Technology Market Place Exhibition

Prototypes/ models and posters of grant products were displayed at the “Technology Market Place” exhibition held in 14- 15 December, 2013. The exhibition was organized by the Ministry of Technology and Research. During the exhibition, stakeholders were made aware about technology grant products and also inquiries were received about the same.



Follow up on R&D outputs of NSF funded research grants and others with a view to further develop the outputs to the level of commercialization

From 17 final reports received by NSF in 2011, following three projects were recommended to be considered under Technology Grant scheme. The respective grantees were informed to apply under Technology grant scheme for follow up work.

1. Validation of PCR method for diagnosis of Rickettsia disease and its application to map the disease in Sri Lanka
2. Doubly fed induction generator (DFIG) with energy store for wind power generation
3. Mechanistic investigation of interaction of chromium species and thermally heated brick clay

Technology Division had received 03 final reports of NSF research projects completed in 2012, for follow up. However, all three projects (given below) were not in a position to consider under Technology Grant scheme due to following reasons.

1. Biological control of vegetable pests by *Bacillus thuringiensis* (Bt): Already commercialized
2. Characterization of nanostructured polymer/ fullerene solar cells under direct sunlight: need further research
3. Hydrothermal synthesis and characterization of pure hydroxyapatite and hydroxyapatite organic polymer nano composites for possible applications in dentistry and in artificial bones: follow up work is being carried out with other source of funds

Formulation of a policy and regulatory operational system conducive for encouraging and establishing partnerships

An expert team was appointed and assigned to formulate a policy for developing university-industry-institute-industry partnerships (UIIP). Task is not completed. Two draft policies of previous work were transferred to NASTEC as per the Ministry directive.

Recognition of contributions to National Science & Technology development and conducting the award ceremony

Study report of previous awards is available from last year. Review is in progress to improve the award criteria and the scheme.

Inculcate IP culture among different stakeholders of the NSF

Conducted a training workshop on “Patent Drafting” from 28th January – 01st February 2013 in collaboration with the World Intellectual Property Organization (WIPO) at the hotel “Galadari”. The objectives were to develop a competent resource pool capable of drafting patents to share knowledge with fellow scientists and researchers in their institutions and to make an effective contribution in drafting patents. Twenty three participants from Universities and Public Research Institutions were trained by WIPO resource persons.

Technical advice for drafting and filing patent applications/Patent information search

NSF provided consultancy to 10 inventors/researchers on patent filling under local and PCT, patentability criteria specific to novelty and patent search. These inventors were school children, university researches, university graduates as well as inventors directed to the NSF by the Ministry of Technology & Research.

Industry needs assessment

A visit was made to Managing Director, Lanka Tiles PLC to build up new partnership for technology development. During this visit new ideas were generated to improve Technology Grant schemes.

Project on “Developing Nanotechnology in Sri Lanka” funded by the IDRC Canada.

The Project titled “Developing a regulatory framework for nanotechnology related activities in Sri Lanka” funded by International Development Research Centre (IDRC), Canada is the Sri Lankan component of the regional project titled “Nanotechnology in South Asia – Building Capabilities and Governing the Technology”. The regional project is jointly implemented by Sri Lanka (National Science Foundation), India (The Energy and Resources Institute) and Pakistan (Preston University).

The project was implemented by NSF together with five local partner institutions, namely, Sri Lanka Standards Institution (SLSI), Institute of Policy Studies (IPS), National Institute for Occupational Safety and Health (NIOSH), Practical Action, Sri Lanka Institute of Nanotechnology (SLINTEC) and a team lead by Prof. Anoja Fernando.

Two-year project was submitted and final report was completed by 30th May, 2013.

Final out comes:

1. Reports on in-depth analysis of regulatory models of top 10 countries (USA, UK, Japan, Germany, South Korea, Taiwan, China, Australia and France), which have embarked on National Nanotechnology Initiatives were prepared.
2. Nine ISO standards on nanotechnology have been adopted. Nanotechnology standards were published as “SLS 12000” series.
3. Guidelines and procedures for Nano labeling on consumer products (to be operated by Sri Lanka Standards Institution) were developed.
4. Mobile air monitoring equipment for nano particles was purchased to monitor occupational health risks associated with nano particles.
5. A manual on Good Laboratory Practices (GLP) was developed.
6. Ethical Guidelines for research in Nanotechnology was prepared.
7. Code of ethics for application of nanotechnology were prepared.
8. A website was developed (www.nanotech.lk) for public engagement
9. Key players, their role and inter-relation based on Life Cycle Analysis (LCA) in connection with regulatory framework have been identified

S&T POLICY RESEARCH
AND STRATEGY
FORMULATION



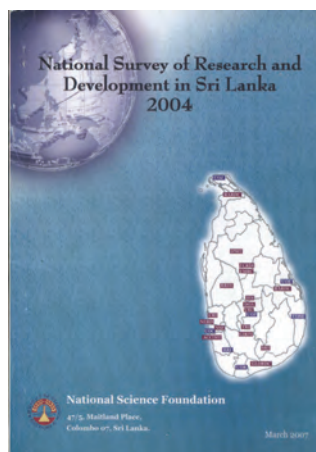
S&T Policy Research and Strategy Formulation

National Research and Development Survey

NSF has been conducting the regular National Research and Development Surveys once in two years since the year 2004. This survey measures and reports the status of science and technology sector in the country in terms of investment and expenditure for Research and Development, availability of Human Resources and the Outputs of the S&T sector.

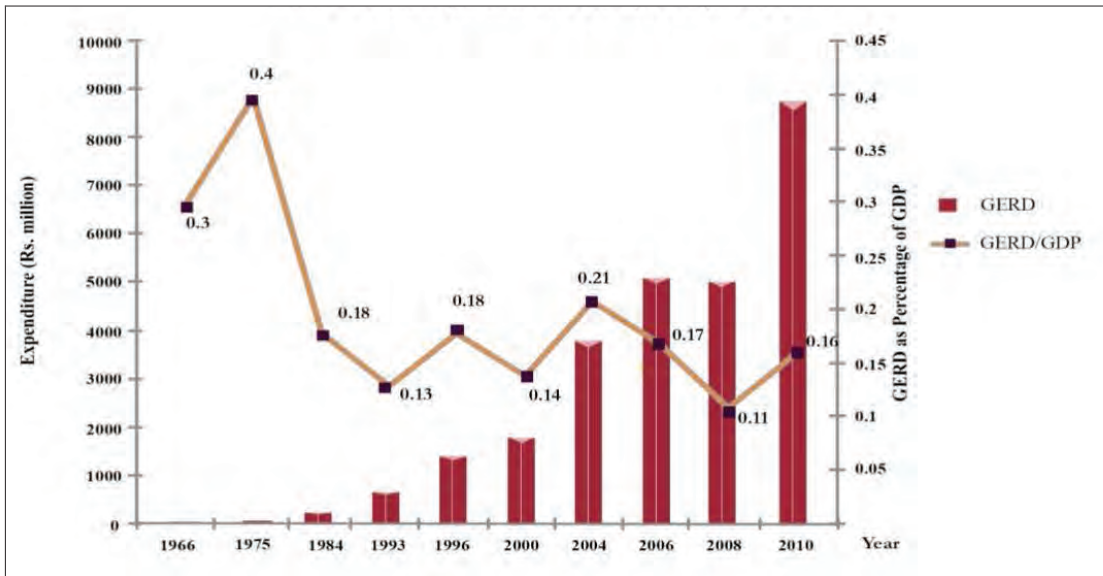
The subsequent fourth survey, the National Research and Development Survey 2010 was commenced in 2011, which collected the data pertaining to the year 2010. The data collection was continued in 2012 covering the higher education sector, S&T institutions, R&D institutions and the local and foreign non-government organizations (NGOs). The data collection in the Industrial sector was also completed in collaboration with the Department of Census and Statistics in the year 2013.

Based on the analysis of data and other related information collected by the National R&D Survey 2010, the indicators of Science, Technology and Innovation were developed and the book titled “Sri Lanka Science, Technology and Innovation Statistical Handbook 2010” was published in May 2013. The Handbook is being used by the stakeholders viz., the Treasury, Govt. Ministries, policymakers, planners, researchers, scientists and technologists, foreign and local donor agencies, NGOs etc.



Highlights of National R & D Survey-2010

- Sri Lanka spent a total of Rs. Million 8,778.16 (USD million 46.1) on R & D corresponding to 0.16% of the GDP of the country.
- Trends in Gross Expenditure on R & D in Sri Lanka

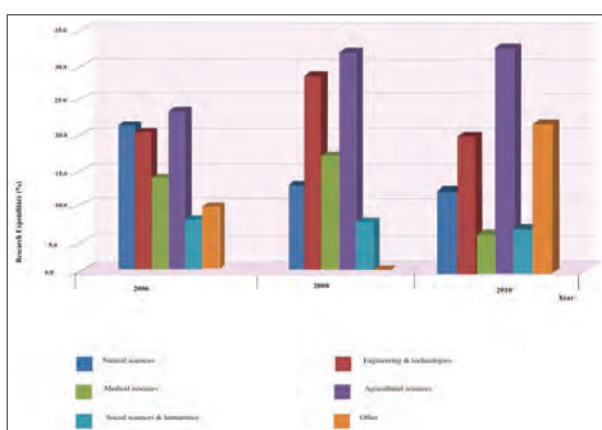


- The private sector (Business enterprise sector) contribution for R&D expenditure had been increased to Rs. million 3,592.58, which was 41.0 % of the total R&D expenditure of 2010 and 0.06 of the GDP.
- Foreign sector contribution to R&D expenditure was Rs. million 239.13, which was 2.72 % of the total R&D expenditure.
- Availability of gross Expenditure on R&D (GERD) by source of funding in selected countries

Country	%GERD						
	Year	Business enterprise	Government	Higher education	Private non-profit	Abroad	Not specified
Australia	2008	62.00	34.46	0.12	1.77	1.65	na
Brazil	2010	45.43	52.66	1.90	na	na	na
China	2009	71.74	23.41	na	na	1.35	na
Germany	2009	66.15	29.74	na	0.26	3.85	na
India	2007	33.92	66.08	na	nil	na	nil
Iran (Islamic Republic of)	2008	30.92	61.64	7.45	na	na	nil
Japan	2009	75.27	17.68	5.89	0.69	0.42	na
Malaysia	2006	84.49	2.44	6.56	nil	0.19	6.31
New Zealand	2009	38.46	45.70	8.18	2.29	5.36	na
Pakistan	2009	na	84.03	12.11	1.66	0.92	1.28
Philippines	2007	61.96	26.08	6.38	0.91	4.12	0.55
Republic of Korea	2010	71.80	26.75	0.85	0.38	0.22	na
Russian Federation	2010	25.51	70.35	0.47	0.13	3.55	na
Singapore	2009	54.45	38.07	1.54	na	5.95	na
South Africa	2008	42.65	45.14	0.11	0.72	11.38	na
Sri Lanka*	2010	40.92	55.90	0.19	0.00	2.72	0.27
UK	2010	45.13	32.14	1.27	5.02	16.44	na
USA	2009	61.60	31.26	3.76	3.38	nil	na

Source : UNESCO Statistics 2009; na-not available

- National Expenditure on R & D (GERD) by discipline 2006-2010
- In 2010, Sri Lanka had a total Science and Technology work force (STP) of 120,797 that were engaged in S&T related activities in the S&T related organizations and business enterprises.
- Science and Technology Personnel (STP) by Category 2008-2010



- In 2010, 1,669 completed postgraduate degrees, which included 31-Ph.D; 261 -MS/MD;99-M.Phil;750M.Sc./M.Eng.; and 528 -Postgraduate Diploma.
- Number of patents registered by residents by sector 2004 – 2010

Source: National R&D Surveys, Sri Lanka 2008 & 2010 (NSF)

STP Category	2008			2010		
	Total number	Percent of STP	Per million inhabitants	Total number	Percent of STP	Per million inhabitants
S&T Scientists	10,222	22.9	506	12,139	10.1	586
Technicians	7,978	17.9	395	14,528	12.0	702
Other supporting staff	26,455	59.2	1,309	94,130	77.9	4,547
Total STP	44,655	100.0	2,210	120,797	100	5,835

Source: Adopted from information of the National Intellectual Property Office of Sri Lanka

Science, Technology and Innovation Policy Research Projects

Small and Medium Enterprise (SME) Cluster Studies

a) Case study on the Rattan (Cane) based Industry

The study was commenced to understand the distribution, linkages, actors involved in the rattan based small and medium enterprises (SMEs) in Sri Lanka and to find out the problems, constraints, gaps etc. existed in the network. The data collection was started in May 2011 and the study was completed in 2013. The Technical Report on “A study on innovation system of the cane industry in Sri Lanka and problems faced by small and medium entrepreneurs” was prepared highlighting the policy recommendations on the development and sustainability of the small and medium enterprises of cane industry that would be of use to the relevant authorities and stakeholders.

Recommendations of the case study

- Since the major constraint to small and medium entrepreneurs of the cane industry is the availability of raw material, it is essential to work out a special mechanism to distribute raw materials equally to all the entrepreneurs who are directly involved in manufacturing Rattan based products.
- Initiatives should be worked out for regular training programmes, transfer of new technologies and make modern equipment available to small and medium entrepreneurs at reasonable cost.
- Establish close links with R&D institutions and S&T service institutions to provide technology know-how and other related services by establishing more avenues for the entrepreneurs to obtain financial assistance at low interest rates.
- Direct involvement of the State in importing raw materials is useful so that the private sector may not have the main hand and it would be possible to get the Vidatha Centres involved (functioning under MoTR) in distribution of raw material to the rural entrepreneurs or similar village associations.
- Establishment of a proper mechanism to link all the local entrepreneurs who manufacture the Rattan based products to the key actors with the aim of achieving the target exporting more rattan based products to the world market.
- There should be a standard and a controlled price for cane furniture and other cane crafts for further development of cane industry. The government should control the price, quality, standard of all the rattan based products so that the durability will be improved.

Impact assessment of equipment grants awarded by NSF

As requested by the Board of Management, a study on impact assessment of Equipment Grants awarded by the NSF during 2007-2011 was undertaken in 2012/2013. A pre-tested questionnaire was employed for the data collection and all the institutes that received equipment grants were visited by the research team. The relevant Technical Report highlighting the policy recommendations to improve NSF equipment grant scheme was compiled in 2013.

Review effectiveness and impact of NSF research grants scheme during 1998-2008

This research project was initiated at the end of 2011 aiming at performing a comprehensive assessment of the NSF research grants scheme in the direction of i) knowledge creation and technology generation; ii) S&T capacity building and in sustaining national research system to engage in research, development and innovation thrust; iii) national productivity, product development and quality improvement; and iv) S&T information generation, collation, processing and dissemination.

Based on the information received from the Pilot Study conducted in 2011, a comprehensive research project was developed in 2012 under the guidance of a Sub-Committee of the Board of Management. The primary and secondary data collection of the project was being continued during 2013 and 30% response was received. The findings will be of use to the NSF Management to improve towards result based research grant scheme.

Other S&T related databases:

The STPRD develops various databases relevant to the S&T sector. Such information will be of use to many stakeholders. i.e.

- Database on Sri Lankan Expatriates – Ongoing project and data collection continued throughout the year.
- Database on Technical Personnel – data collection was commenced in 2011 and continued throughout 2013
- Database on A/L science graduate teachers – data collection commenced in 2011 and continued throughout 2013
- Database on inventors in Sri Lanka – Ongoing project and data were updated as a routine.

Competitive Research Grants on S&T Policy

There were two ongoing grants operating since 2011. However, the NSF Science and Technology Policy Research Panel did not receive any grant applications on S&T policy research and the related fields during 2013.

Activities conducted in the area of Social Sciences

a) International Conference on Migration: Sri Lankans on the Move - 23-25 January 2013

The above International Conference on migration: Sri Lankans on the Move was organized by the S & T Policy Research Division of NSF in collaboration with the National Committee on Social Sciences which was held at the Kingsbury Hotel, Colombo from 23-25, January 2013.

It consisted of plenary sessions followed by technical sessions and a policy dialogue organized jointly with International Organization of Migration (IOM). Fifty four (54) papers under eight (08) themes viz., i) Conceptual and theoretical issues and historical trends; ii) Migration and development; iii) Diaspora, political refugees, irregular migration and citizenship issues; iv) Migration and health; v) Migration and education; vi) Social impact of migration; vii) Economic implications of migration; and viii) Migration policies and governance were presented by local and foreign social scientists.

An open forum was provided through a policy dialogue to discuss the issues and policy recommendations

rose from plenary and technical sessions of the Conference and also created a platform for discourse on Migration related issues among relevant government authorities, researchers, academics, International Organizations, NGOs, foreign missions etc. The outcomes of the Conference were i) book of proceedings with Abstracts published, ii) selected full papers suitable for publication in a journal and iii) report with the recommendations highlighted at the policy dialogue session on migration.

b) A seminar on “Ageing and public policy in Sri Lanka: issues and trajectories” was held on March 27, 2013 at the NSF Auditorium under the directive of the National Committee on Social Sciences. It provided a platform for the available multidisciplinary expertise to present their studies and views to develop and strengthen the evidence-based policy and decision making on the issues surrounding the complexities of ageing population in Sri Lanka.

c) Identifying the national importance of the theme, the National Committee on Social Sciences recommended conducting a series of media presentations. Four (04) “Subarathi” Radio programmes under four (04) themes viz., i) International Migration: general issues and advantages and disadvantages and social and economic impact of migration; ii) Development induced resettlement: recommendations for planning, policy formulations, policy implementation, gaps in policies and regulations etc.; iii) Ageing population of Sri Lanka and future challenges; and iv) Human behavior, health and role of Social Sciences were conducted at Sri Lanka Broadcasting Corporation (SLBC) - Sinhala National Service.

Workshop on “Revisiting Traditional Knowledge” -27August, 2013

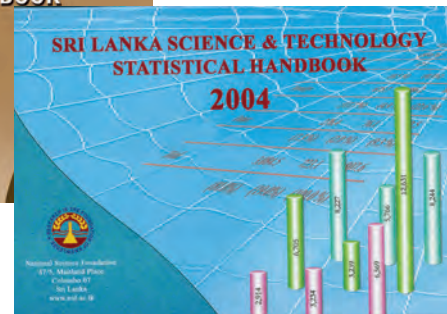
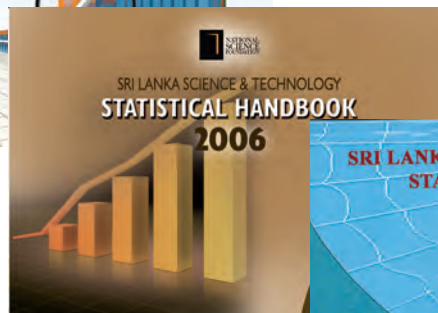
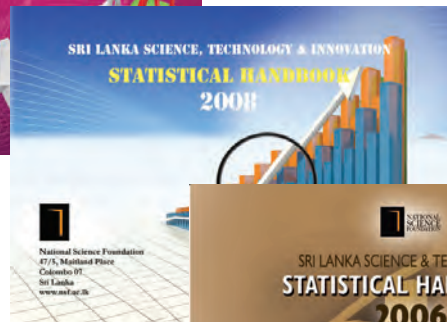
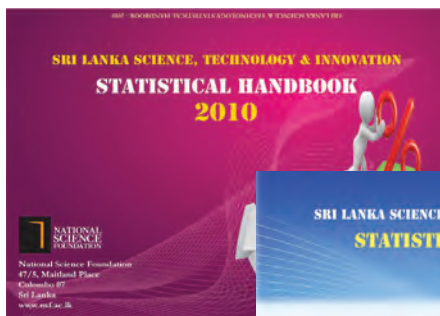
With the aim of investigating the scientific basis of Traditional Knowledge and utilizing it for the social and economic benefits of the country, a workshop on “Revisiting Traditional Knowledge” organized by the NSF in collaboration with the Expert Study Group on Scientific Basis of Traditional Knowledge appointed by the National Science and Technology Commission (NASTEC) was held on the August 27, 2013 at the NSF Auditorium.

The senior officials of the relevant Ministries, researchers and academics working in the area and officers of Non-Government Organizations were brought together on one platform to share their experience, knowledge and research data etc., along with recommendations. It was provided an open forum to explore the current status and the issues related to Traditional Knowledge in Sri Lanka and to identify existing gaps of the sector via the SWOT analysis conducted by the participants. A technical report was compiled and made available for the use of all stakeholders.



Technical Reports

- Proceedings of International Conference on “Sri Lankans on the Move: International Conference on Migration (ICSOM)”
- Technical Report on “A study on innovation system of the cane industry in Sri Lanka and problems faced by small and medium entrepreneurs”
- Technical report on “Ageing and public policy in Sri Lanka: issues and trajectories”
- Technical report on “Development induced resettlement in Sri Lanka”
- Technical report on “Revisiting Traditional Knowledge”
- Technical report on “Output/outcome of Equipment Grants provided by NSF during the period of 2005-2011”



SCIENCE
EDUCATION AND
POPULARIZATION



Science Education and Popularization

Production of 'Mihimandala' Video Programmes and telecast over TV channels

'Mihimandala' is a series of video programmes produced in all three languages (Sinhala, Tamil, and English) under different scientific topics targeting the general public. The duration of a programme varies between 20 - 25 minutes.

The first phase of the Mihimandala Video Programmes was completed during 2005/2006, and produced 13 programmes. The best mode to reach the general public viz., telecasting via TV channels was used to take the knowledge on current scientific topics to the public. The programmes were telecast via National TV channels, as Independent Television Networks (ITN; Sinhala Programmes), Sri Lanka Rupavahini Corporation (SLRC; English and Tamil Programmes), Teleshan Network Limited (TNL; Sinhala Programmes), and Derana TV (Sinhala Programmes).

The second phase was started during the last quarter of the year 2012. A suitable production house was selected based on the tenders received for producing 15 video programmes in all three languages.

Fifteen topics and resource persons were identified. Following synopses were obtained from the resource persons and sent to the production house for producing the video programmes in all three languages.

- Lifestyle & Health
- Robotics and its Future
- Resilience to Climate Change
- Bio Mimicry for development of science
- Safe use of ground water

Conducting science programmes on current topics via TV and radio

Four (04) 'Subarathi' programmes were arranged with the Sri Lanka Broadcasting Corporation, on the request made by Science & Technology Policy Research Division (STPRD), which handled the programme

Increase the availability and accessibility of authentic scientific publication

Publication and dissemination of the Vidurava Science Magazine



The Vidurava Science Magazine is one of the oldest Science Magazines in the arena and publication of the Vidurava was started as a Science Bulletin in 1978. At that time, it was published only in the medium of English. This Magazine is currently published three issues per year; on January, June and November (Special issue), in all three languages and edited by three different editors.

The Vidurava Science Magazine is distributed free of charge to the following institutions.

- School Science Societies registered with the NSF
 - 02 copies of the native languages (Sinhala or Tamil), and 01 copy of the English version.
 - Distribution is done based on the language used.
- Vidatha Centres
 - One copy each from the native language (Sinhala or Tamil) and 01 copy of the English version.
 - Distribution is done on the language basis.
- University Science Libraries
 - One copy from all three language is sent to Libraries of the University Science Faculties.
- Provincial Science Coordinators (09 nos) and Zonal Science Directors (97 nos)
 - One copy from all three languages

Following issues were published during the year 2013.

- January, 2013 issue : Vol. 30, No. 01
 - Theme : Mineral Resources of Sri Lanka
 - Language versions : Sinhala, Tamil, English
- June, 2013 issue : Vol. 30, No. 02
 - Theme : Air We Breath
 - Language versions : Sinhala, Tamil, English

- November, 2013 issue : Vol. 30, Special Issue
Theme : Lifestyle & Health
Language versions : Sinhala, Tamil, English

Publication of Newsletters

Three issues (January and April combined, July and October) of the Vidya Newsletter were published covering information of seminars, workshops, conferences organized or conducted during the period. The Newsletter also provides information on the research grants and travel grants administered during the year. About 300 copies of each issue of the Newsletter were distributed among the NSF Committee members, libraries of Universities and R & D institutes.

Publication of science booklets for school children

Based on a concept of the Hon. Minister of Technology & Research, and with an objective of improving readership on scientific concepts among the school children (Grade six to G.C.E. O/L), it was decided to publish and distribute a series of science books and booklets especially among the underprivileged schools in the country.

A scheme, application form, and guidelines for the above activity were developed and an advertisement was published in the Newspapers requesting authors to send applications mainly in the disciplines such as, Nuclear Energy, Nano-technology, Bio-technology, Gene-technology, Environmental issues, Scientific thinking, Mathematics etc.

30 applications were received from the authors. Suitable synopses for manuscripts would be identified in the next year (2014).

Quotations were called for re-printing of "Ganitha Vinodaya" (5,000 copies, Tamil version -1,000 copies) and to purchase 100 copies of the English version of the same, and selected bidders for the above.

Implement the School Science Society (SSS) programme

Forty one (41) new School Science Societies were registered with the NSF at the end of 2013, as follows.

Sinhala medium :	37
Tamil medium :	03
English medium :	01
	—
Total :	41
	==

The service of the local scientists was provided free of charge to 12 schools registered with the NSF for their science days. The cost of transport, honoraria, and refreshments for the scientists was borne by the NSF.

Conducting Orientation workshops for the Teachers In-Charge of school science societies registered with the NSF was continued and three, two-day workshops were conducted in three Provinces (Sabaragamuwa, Central, and North Western).

The member schools were provided with opportunities of participating programmes organized by the NSF such as Inter School Science Society Competition, visits to Research Institutes, Universities and industries, Science Research Projects Competition, Sri Lanka Science & Engineering Fair, and the World Science Day 2013 Schools Programme.

Organizing the Inter School Science Society Competition

An Inter School Science Society Competition was organized in parallel to the World Science Day 2013 Schools Programme under the theme; 'Lifestyle & Health'. There were 71 applications for the drama competition and 93 applications were for the Role Play competition. Based on the number of applications, locations were selected for the first round competitions of the drama and the role play. Therefore, seven satellite programmes; first round competitions (at Kandy, Kegalle, Galle, Kurunegala, Colombo, Jaffna, and Batticaloa) were conducted for the first time of the history of the School Science Society Competitions. Final round of the above two competitions was conducted in Colombo.

A Short Drama (Science) Competition & a Role Play Competition (mentioned above), along with Manual Poster Competition, Digital Story Telling Competition, Science Fiction Competition, and Teachers' Award Competition were conducted under the Inter School Science Society Competition, and the winners were felicitated at the "World Science Day 2013 Schools Programme", held in November.

World Science Day Schools Programme

The World Science Day 2013 Schools Programme was held on 25 November 2013 at the BMICH under the theme "Lifestyle & Health". Hon. Minister of Technology & Research graced the occasion as the Chief Guest while Hon. Deputy Minister of Education participated as the Guest of Honour at the above event. School children and teachers of the school science societies were invited for the event and around 1000 were participated at the programme.

Keynote Address on "Lifestyle & Health" was delivered by Dr Prasad Katulanda, endocrinologist and a senior lecturer, Faculty of Medicine, University of Colombo. Winners of the following competitions were felicitated at the World Science Day.

- Inter School Science Society Competition (Short Science Drama, Role Play, Manual Posters, Digital Storytelling, and Science Fictions)
- Teachers' Award Competition for promoting Science amongst the School Children
- Prof. M.T.M. Jiffry Memorial Award for Popularization of Science
- Star Rating for evaluation of the best performing School Science Societies, which are registered with the NSF.
- Science Research Project Competition and Sri Lanka Science & Engineering Fair

A Mini Exhibition on Healthy Lifestyle was also organized on the same day of the World Science Day Programme in collaboration with the Sri Lanka Medical Council at Mihilaka Medura, Outer Canopy. Nirogi Lanka, Health Education Bureau, Diabetes Association of Sri Lanka, and Non Communicable Disease Unit of the Ministry of Health organized stalls at the Mini Exhibition.

University Science Society (USS) Programme

NSF University Science Society Programme has been established with the objectives of creating a platform for science undergraduates to develop their knowledge and skills in national activities, enhancing science communication and writing skills of the undergraduates, utilizing the knowledge of science undergraduates to popularize science for well being of the citizens of Sri Lanka, and facilitating learning of science among school children and undergraduates.

Thirty one (31) University Science Societies have been registered with the NSF by the end of the year 2013.

Mobile Science Exhibition Bus

Based on a concept of the Hon. Minister of Technology & Research, and with the objectives of popularizing Science and Technology through hands on experience, establishing a scientific culture among school

children as well as to enhance their investigative ability, creativity and innovativeness, and attracting school children to learn science, preliminary work was done to purchase a suitable bus to be used as an exhibition bus. All the specifications were identified and tenders to be called in the next year.

Collaborative work with the institutes under the Ministry of Technology and Research to popularize science, and conducting School Science Days

Four (04) Science Days with exhibitions were conducted in collaboration with the Ministry of Technology and Research, and the Ministry of Education at Anula Vidyalaya, Nugegoda; Dharmapala Vidyalaya, Pannipitiya; Gnanodaya Vidyalaya, Kaluthara; and Rajasinghe Maha Vidyalaya, Avissawella; to create enthusiasm and interest on science among the school children and also to popularize science. Exhibition stalls were arranged by the institutes under the Ministry of Technology and Research. This activity will be continued in the next year (2014) as well.

Support Sri Lanka Olympiad Federation (SLOF) and provide grants for International Olympiad participation

The Candidates of five (05) National Olympiad competitions were sponsored for registration, airfare and accommodation etc., to participate at the International Olympiad Competitions. The following International Awards were won by them.

1. 14th Asian Physics Olympiad held in Indonesia - 01 Bronze Medal
2. International Mathematics Olympiad -2013 held in Colombia - 01 Bronze Medal, 4-Honourable Mentions (Merit Awards)
3. 7th International Olympiad on Astronomy & Astrophysics held in Greece - 01 Honourable Mention
4. International Olympiad in Informatics 2013 held in Australia
5. XVII International Astronomy Olympiad Competition in Lithuania-Received a prize for best results of new participatory countries

Conduct awareness campaign on nanotechnology

The following nanotechnology awareness programmes were facilitated in order to disseminate the beauty and the fascinations of nanotechnology among the younger generation, which will lead to an attitudinal change and insert the importance of nanotechnology to the mindset of younger generation.

- Awareness programme for the school children and teachers organized by Vidatha Centre, Rathnapura was held on 15 March 2013.
- Awareness programme for school children and teachers organized by Vidatha Centre, Rattota, Matale was held on 27 June 2013.
- Awareness programme for the school children and teachers organized by Zonal Education Office, Chilaw, was held on 01 August 2013.
- Awareness programme for the school children and teachers organized by Zonal Education Office, Kegalle, was held on 11 September 2013.
- Awareness programme for the school children and teachers organized by Rathmalgoda M.V., Polgahawela was held on 15 October 2013.

Facilitate interactions between schools and research institutes/ industry/ universities

The National Science Foundation (NSF) in collaboration with the Ministry of Education has identified the importance of establishing linkages between the Schools, Research Institutes and the Industry. The objectives of establishing these linkage are to :

1. Provide an opportunity for the school children to observe the application of basic scientific concepts in Research / Industry
2. Build up scientific temperament, enhance innovativeness and creativity among the school children
3. Attract school children to science disciplines and science careers

Under this programme a group of 30 students from each of the following schools visited Industrial Technology Institute (ITI).

1. St. Joseph's Gils' School Nugegoda - February (22.02.2013)
2. Ashoka Vidyalaya, Colombo 10 - March (15.03.2013)
3. Ramasinghe M.V. , Kelaniya - May (17.05.2013)
4. Rathnavali B.V., Gampaha - June(14.06.2013)
5. Gnanodaya M.V., Kalutara - July (05.07.2013)
6. De Soysa M.V., Piliyandala - September (13.09.2013)
7. Viharamaha Devi B.V., Kiribathgoda - October (25.10.2013)
8. Dudly Senanayake Vidyalaya, Colombo 05 - November (01.11.2013)

A group of 50 students of Maliyadeva Model M.V, Kurunegala visited the Nanotechnology Research Laboratory, Department of Electronics, Wayamba University of Sri Lanka on 25.09.2013.

The National Science Foundation (NSF) in collaboration with the National Engineering Research & Development Centre (NERDC) organized a residential programme to train the identified Science Leaders. The objectives of this programme were to provide an opportunity for the gifted students to observe the application of basic scientific concepts in Research / Industry, to build up scientific temperament, enhance innovativeness and creativity among the school children, to motivate and attract gifted students for science disciplines and science careers to create a knowledge based economy, to build leadership qualities in students and train them as Science Leaders, and also to strengthen the foundation of potential scientists, engineers, mathematicians etc.

A pilot programme was successfully conducted on the 4th & 5th of December 2013 at NERDC, Ekala, and 28 school children were trained as Science Leaders.

**S&T INFRASTRUCTURE,
CAPACITY AND
PARTNERSHIP BUILDING**



Facilitating Research

S&T Infrastructure, Capacity and Partnership Building

- Four PhDs were supported by the Overseas Special Training Programme (OSTP) during 2013. 19 grants were awarded under the Overseas Special Training Programme (OSTP) to enhance national capacities in Science, Technology and Innovation by providing opportunities for training at centres of excellence abroad in areas where such training facilities are not available in the country.
- No. of OSTP Applications processed in 2013: 27
 No. of OSTP Grants Awarded in 2013: 19
 Total Amount of funds spent: 4.43 (LKR/M)

Global Research Alliance on Agricultural Greenhouse Gases

Membership of the Global Research Alliance on Agricultural Greenhouse Gases was obtained by Sri Lanka and the NSF acts as the National focal point. Scientists were identified and nominated as suitable contact points of the research and cross-cutting groups of the alliance i.e. Croplands Research Group; Paddy Rice Research Group; Livestock Research Group; Soil Carbon and Nitrogen Cycling Cross-cutting Group; and Inventories and Measurements Cross-cutting Group.

Global Forum of Sri Lankan Scientists - Progress

Based on the recommendations made at the Global Forum held in Sri Lanka, Twenty five (25) projects were initiated, and out of them eight projects have been completed. Information on the completed projects are given below.

- i. Establishment of a high throughput genomics facility
- ii. Establishment of a Bioinformatics service that caters to the global need for sequence analysis
- iii. Initiation of a collaborative M.Sc. Course in Stem Cell Biology with Manipal Institute of Regenerative Medicine
- iv. Initiation of establishment of an antibody based vaccine development facility

- v. Research and Development of Coloured Glazes
- vi. Introduction of Sri Lankan skincare products to Australian and New Zealand markets.
- vii. Establishment of a Joint Research and Development venture on solar energy.
- viii. Institutional Capacity Building in Water Management and Climate Change Adaptation in selected Countries in Asia and Africa.

Two (02) new projects have been incited after the Global Forum based on the collaborative activities conducted by the International Liaison Division, Projects detail are given below;

- Phytocapping for sustainable waste containment systems and reduction of greenhouse gas emissions and odour from waste disposal sites
- Toxicological Studies on Marine Toxins in Sri Lanka

International Collaborations

Science Council of Asia

Chairman, NSF participated at the International Social Science Council General Assembly 2013 held from 10-12 October in Montreal, Canada on the invitation of SCA.

Memorandum of Understanding (MoU) between Pakistan Science Foundation (PSF) and NSF

A Memorandum of Understanding (MoU) was prepared to be signed between the Pakistan Science Foundation and the NSF. Arrangements were made to obtain the approval of the relevant authorities prior to signing of the MoU. This will provide an opportunity for local scientists/ technologists to obtain expertise and establish collaborative activities in various fields of Science and Technology as well as in popularization of science.

International Council for Scientific Union (ICSU)

Ms Mahesha Nadugala, Scientific Officer participated at the 5th International Council for Science (ICSU) Regional Consultation on “Future Earth in Asia and the Pacific”, held from 26 – 27 November 2013, Seoul, Korea.

International Centre for Genetic Engineering and Biotechnology (ICGEB)

NSF is the focal point for ICGEB. The NSF received ten (10) applications for the year 2013. Based on the recommendations of the NSF Research Panel on Biotechnology and as per the ICGEB guidelines, three (03) proposals were submitted to ICGEB Headquarters to be considered under the ICGEB – CRP grant Scheme for 2013.

Annual TWAS/NSF Prize for Young Scientists

The NSF in concord with the Third World Academy of Sciences (TWAS) has instituted a scheme for the annual award of prizes for talented young scientists who have attained a high level of excellence in research work, in the fields of Biology, Chemistry, Mathematics and Physics. All awards consist of a cash prize equivalent of US\$ 2000 granted by the Third World Academy of Sciences (TWAS) and a certificate from the NSF. The prizes are intended to provide an incentive to talented young scientists to attain high levels of excellence in their research work and to reward such attainments. The TWAS Young Scientist Award 2013 was awarded to Dr N.K.A. Silva from the Rajarata University, Mihintale.

International Collaborations

The international collaboration programme in Science and Technology was continued. Forty three (43) travel grants were awarded to Sri Lankan scientists to present their research findings at international fora

and to acquire knowledge on latest developments. Nineteen (19) grants were awarded under the Overseas Special Training Programme (OSTP) to enhance national capacities in Science, Technology and Innovation by providing opportunities for training at centres of excellence abroad in areas where such training facilities are not available in the country. Three grants were awarded under the International Partnerships for Science and Technology (IPSAT) scheme to obtain services of high caliber scientists and technologists working abroad.

NSF Travel Grants

The objectives of this programme are to provide an opportunity to Sri Lankan scientists and technologists to present their research findings at International fora and to acquire scientific knowledge on new discoveries, achievements, and developments in order to experience the global efforts. Grantees have the opportunity to participate at international conferences to share their research findings, upgrade knowledge and establish linkages with scientists working in similar areas across the globe for future collaborative activities. The details of the Travel Grants awarded in 2013 are given in Annex 08.

International Partnerships for Science and Technology (IPSAT)

The International Partnerships for Science and Technology (IPSAT), is a programme to obtain services of high caliber scientists and technologists working abroad. It is directed at promoting international research collaborations, technology transfer, and at obtaining expertise towards developing a globally-engaged community of scientists and technologists in Sri Lanka. This programme was initiated in year 2012. Three (03) IPSAT grants were awarded to Prof. Karen Jacobs, Clinical Professor and Programme Director, Distance Education Post-professional Occupational Therapy Programmes, Boston University, USA; Honorary Prof. Sena Susantha de Silva, School of Life and Environmental Sciences, Deakin University, Australia;



and Prof. Timothy K. Shih, Professor of E-Learning systems & Video Processing, National Central University, Taiwan: as keynote speakers for the Annual Scientific Congress 2013 of Sri Lanka Medical Association (SLMA) on “Inculcating Ergonomics in Sri Lankan Setting”; Annual Sessions of the Sri Lanka Association for the Advancement of Science (SLAAS) 2013; and International Conference on Advances in ICT for Emerging Regions 2013, University of Colombo School of Computing (UCSC) respectively.

KNOWLEDGE CREATION,
COLLATION, PROCESSING
AND SHARING



Knowledge Creation, Collation, Processing and Sharing

1.0 Maintain a Science and Technology Management Information System (STMIS)

- The Science and Technology Management Information System (STMIS) is an online computerized information system.
- STMIS contains updated information of scientists, S&T related R&D institutions, service providing institutions, higher education institutions, advanced scientific equipment available in the institutions, information on services and training programmes offered by the S&T institutions, research publications and information on the ongoing research in the country.
- Identity Cards are issued to registered scientists, indicating the STMIS registration number and an electronic barcode giving modern security facilities to the same.

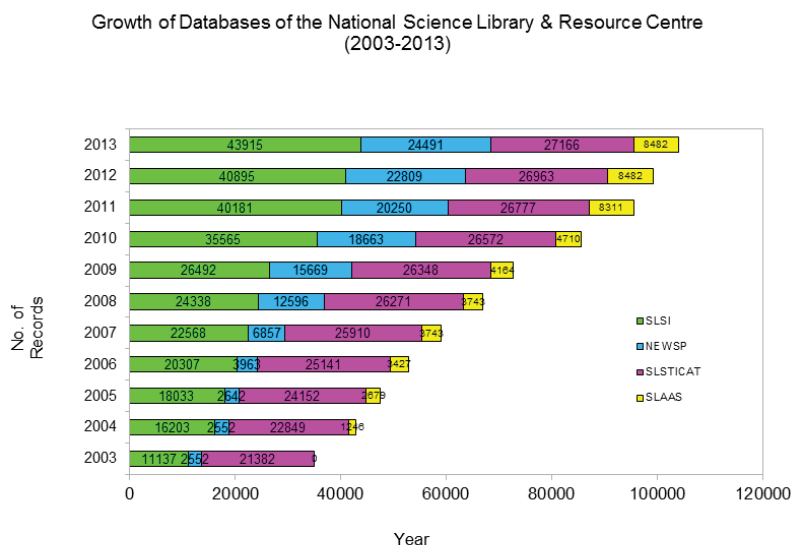
By the end of 2013, the total number of scientists registered in the database was 5,017. Total number of Institutions that provided information to the database were 191 and this included 37 S&T faculties of the state universities and 46 institutions in the S&T sector including R&D institutions and service providing institutions.



2.0 Strengthen the National Science Library & Resource Centre (NSLRC)

2.1 Database Development :

The NSLRC by mandate maintains a number of national level databases that serve as search and location tools enabling researchers and the academia to access information on current and past research conducted in the country. All databases functioned and progressed well during 2013.



- [Sri Lanka Science Index Database \(SLSI\)](#) : During the year, the SLSI database has shown a significant progress. The number of new records added to the database was 3010. The programme on converting the SLSI into a full text digital library was accelerated by uploading 10060 full text documents.
- [Tool for measure database usage statistics](#) : A tool was incorporated to measure the usage statistics of each of the databases. The tool records and analyses daily usage statistics. Lack of a mechanism to obtain usage statistics was a major drawback experienced in the past.
- [S & T News paper articles Database \(NewsP\)](#) : 1682 new records on articles on science and technology and allied fields appearing in local newspapers were added to the database during the year.
- [Research Grants Database \(RGRA\)](#): The database was updated with the incorporation of information on 67 final reports and Postgraduate theses received during the year resulting from NSF funded projects.

2.2 Collection Development : National e-repository :

- It is of vital importance to keep in par with the latest information dissemination technologies to provide the best services to the local scientific community. Accordingly transferring the contents in the conventional SLSI database into the new National e-Repository launched in 2009 on DSpace software was further continued. Total number of items transferred during the year from SLSI to national e-repository was 1288 and the total number of items recorded in the national e-Repository as at 31 December 2013 was 5540. The number of Full text of local scholarly journals accessible through the national e-repository was 16. One new community on 'Chronic Kidney Disease on Unknown Etiology' was incorporated accommodating 99 full text documents.

2.3 Collection Development – Reference Collection, Special subject collections:

- 203 new books were added to the collection to cater to the reference requirements of the scholarly community. The centre continued to receive copies of new issues (over 65 titles) of scholarly journals published within the country. Number of foreign journal titles subscribed was 7.

- Weeding of the book collection : The contents in the book and report collection were reviewed and streamlined by weeding off the outdated and duplicate material.
- New open source system for library catalogues and serials control – KOHA : In spite of the advanced features and high performance of the software currently in use (CDS/ISIS – windows version) in maintaining the NSLRC catalogue, it performs poor in circulation and library housekeeping operations. To compensate, a Library management system on KOHA, open source library management software used worldwide was installed successfully. The system will be customized as suitable to maintain the library books and serials collection including circulation of material. It will be maintained as a model Library Management System for the country.

2.4 Collection Development : Strengthening access to global literature :

It is crucial to provide the research and academic community with access to the latest global research literature to promote and support education and productive research. To cater to this prime requirement, the centre continued to provide access to the following international databases within the NSF premises. During 2013, the global resource base was further strengthened with the addition of a new database ARDI (Access to Research & Development Information) maintained by WIPO (World Intellectual Property Organization). Details of usage including searches and supply of copies of documents is provided under section 4.0 on Information services.

- [SCOPUS Citation & Abstracting Database](#): SCOPUS is a comprehensive information source for literature searches covering peer-reviewed literature in over 20500 journals from 5000 publishers with smart tools that track, analyze and visualize research. It is an ideal source to conduct literature searches.
- [TEEAL \(The Essential Agricultural Library\)](#) : TEEAL provides access to the full text articles in 200 essential Agriculture journals by leading publishers.
- [HINARI \(Access to Research in Health\) full text journal database](#) : HINARI together with major publishers provides online access to the major journals (8,500 titles and 7000 e-books) in the fields of biomedical and related social sciences.
- [AGORA \(Access to Global Online Research in Agriculture\)](#) : The AGORA program, set up by the Food and Agriculture Organization (FAO) of the UN together with major publishers, enables access to an outstanding digital library collection in the fields of food, agriculture, environmental science and related social sciences. It covers contents of 1900 journal titles.
- [ARDI \(Access to Research & Development Information\) Database](#) : ARDI is a database of scholarly literature which provides free online access to Sri Lanka from diverse fields of Science & Technology. It provides access to over 10,000 Journal titles, Books and Reference Works
- [NSLRC Web site](#) : The NSLRC web page which serves as a central gateway to local and international scholarly resources was redesigned to give a more user friendly and easy approach for scholars to reach their information. More useful links to both local & international resources were added. Special focus was given to provide links to Open Access Journals, Institutional Repositories and other free resources to compromise the very limited access to subscription based international journals and databases within the country.

3.0 Strengthening access to information in local libraries

3.1 National Digitization Project (NDP) :

The objective of the National Digitization Project (NDP) is to provide online full text access to locally generated S & T literature through a national network of Institutional Repositories (IR) maintained among

all universities, research institutes and other S & T Institutions. Digitization work of Phase I of the NDP, which was commenced in 2012 was completed during the year. Phase I of the project covered eight (8) institutions namely, Rubber Research Institute, Coconut Research Institute, Council for Agriculture Research Policy, University of Moratuwa, Industrial Technology Institute, Hector Kobbekaduwa Agricultural Training and Research Institute, Central Environmental Authority and the Post Graduate Institute of Agriculture (PGIA). The collections covered literature in the form of monographs, journals/articles; conference proceedings, theses, manuscripts and newspaper articles. The total number of pages digitized was 673,625.

During year 2013, main emphasis was placed on uploading the digitized documents into the respective Institutional Repositories. Services of temporary staff were obtained as a remedy to the inadequacy of staff in participating libraries to handle the task. Uploading of documents in PGIA did not commence. Total number of documents uploaded to all seven IRs was 4540. Detailed Information on the number of documents accessible through each IR is given below.

- Hector Kobbekaduwa Agricultural Training and Research Institute (HARTI) – 1115 documents
- Coconut Research Institute (CRI) – 424 documents
- Rubber Research Institute (RRI) – 670 documents
- Central Environmental Authority (CEA) – 1205 documents
- Council for Agriculture Research Policy (CARP) – 130 documents
- Industrial Technology Institute (ITI)– 796 documents
- University of Moratuwa (UM) - 200

3.2 Central Search platform for National Network of Institutional e-Repositories :

The objective of the National Network of Institutional Repositories is to provide a Cross Archival Search Service for the collective Sri Lankan Research output. The network was strengthened and 'federated searching facility' was improved to search across more local Institutional Repositories(IR) and the journals published on the Sri Lanka Journals Online (SLJOL) platform.

3.3 Sri Lanka Journals Online (SLJOL) :

A Memorandum of Understanding (MoU) was signed between NSF and INASP (International Network for the Availability of Scientific Periodicals), UK on 21 November to takeover the administrative functions of Sri Lanka Journals Online (SLJOL) project by the NSF. SLJOL (<http://www.sljol.info>) is a programme for online publishing of peer reviewed scholarly journals of Sri Lanka covering the full range of academic disciplines, the main objective being to provide greater visibility and outreach to the contents of Sri Lankan research findings and to increase worldwide knowledge of indigenous scholarship. It was set up in 2008 by INASP as part of the SIDA/SAREC Library Support Project (SSLSP). The system now publishes 51 Sri Lankan journals online

3.4 Union List of Periodicals database :

The project launched in 2012 to upgrade the existing Union List of Periodicals (UNILIST) database into a more comprehensive and up to date information tool was successfully completed. Fresh information on journal holdings in 55 major libraries in the country were collected and information in the existing database was updated. The new database covers holdings information on 6623 scholarly Journal titles available in local libraries and it serves as a search and location tool to assist scholars easy and quick location of resources within the local library system. Facilities have been incorporated for online ordering and exchange of journal articles.

3.5 Promote and support the development of databases and institutional e-repositories in Universities and S&T libraries for effective resource sharing :

Provision of technical support for IT based services in other libraries and training library professionals are two responsibilities vested on the NSLRC. During the year under review the following services were provided based on requests received from libraries.

- **Hosting of Library catalogues :** The total number of library catalogues of other S & T Institutions hosted within the NSF server as at 31 December 2012 was 24. The catalogues are searchable online and this facility enables high visibility to library collections in the country leading to increased resource sharing and higher utilization of the limited resources within the country.
- **Institutional Repositories (IR) :** Hosting of the IRs of HARTI, RRI, CRI and CEA were continued. The rapid growth of the contents in IRs was significant. Total number of full text documents added to all IRs was 4540.

4.0 – Information Services

4.1 Literature searches, document supply services and Reference services :

The Centre continued to cater to the information needs of the scholarly community. Requests received for literature searches, copies of documents and journal articles were successfully fulfilled. Reference and information enquiry services were also satisfactorily provided.

The number of searches made to cater to user needs on international full text databases (namely HINARI, TEEAL, AGORA and ARDI) during the year was 138 and the total number of articles downloaded for scholars from these sources was 853. Another 159 searches were made for users on other internet databases.

Total number of literature searches made on SCOPUS Citation & Abstracting database was 1704 and the total number of abstracts downloaded from SCOPUS was 2303. The total number searches made on local databases maintained by the NSLRC was 196. Copies of documents/articles were supplied as required. 61 enquires made over the phone were fulfilled.

4.2 Current Awareness services (CAS) :

The monthly current awareness service disseminated through the ScinnoTech e-newsletter was successfully continued. The total number of CAS lists provided during the year was nine (09). The objective of CAS was to keep the scholars aware of latest research findings within their scope of research.

5.0 Capacity building of library professionals in other S&T libraries for effective dissemination of information services.

5.1 Training programmes and Workshops:

In order to provide efficient information services to the scholarly community, it is essential to improve the skills and knowledge of library and information professionals on new information dissemination technologies. To cater to this need, training programmes were conducted for library professionals and technical support was provided to set up databases/Institutional repositories in other libraries. The total number of persons trained during the year was 64.

- **CDS/ISIS (windows version) Workshops:** Based on the demand for training, two workshops on basic applications of the CDS/ISIS software (windows version) were conducted on 19-20 April and 16-17 August respectively for 16 participants from several libraries in the country. This has led to improved and more efficient library services within institutions.
- **Distribution of the software :** The Centre continued to serve as the country focal point to distribute

the UNESCO developed WINISIS Library Management software. On request of libraries, 21 copies of the software was provided supported with necessary training on its applications

- Assistance in trouble shooting : The Centre has a responsibility to assist libraries using CDS/ISIS software to overcome problems faced during applications. On 40 occasions, NSLRC staff successfully assisted to overcome such problems.
- Workshop on D-Space Software for developing Institutional Repositories : A workshop was organized on 7 June for 18 librarians to provide necessary knowledge and training on data entry in D-Space software. The workshop was exclusively for staff of libraries participating in the National Digitization Project. Another follow up training was conducted in September for five (5) temporary staff members (data entry operators) working in the same project.
- Workshop on Sri Lanka Journals Online and Journal Quality : A workshop to train editors of Scholarly journals publishing on the Sri Lanka Journals Online (SLJOL) platform was organized from 15 – 17 July 2013. A total of 27 journal editors participated and Ms. Sioux Cumming, Program Manager, Journals Online Project, International Network for the Availability of Scientific Periodicals (INASP) of UK served as the resource person.

5.2 Seminars :

Seminars are periodically organized to keep library professional and scientists aware of the latest developments in information dissemination and resources and services available.

- Seminar on Open Access to Research Information : A seminar/workshop was conducted with a view to creating awareness among the senior academics, researchers, journal publishers, policy makers and funding bodies on the Open Access (OA) mode of resource sharing and to provide a platform to discuss on the issues related to OA practices in Sri Lanka. Pioneers of Open Access concept, Ms Heather Joseph, Executive Director of the Scholarly and Academic Resource Coalition (SPARC) and Dr Alma Swan, Director of Advocacy Programmes, SPARC, Europe served as resource persons. The programme was attended by 48 participants. Based on a recommendation of the workshop a draft Open Access Policy that can be used as a template to be used across universities and research institutions was developed by a NASTEC working committee.
- Seminar on New trends in information dissemination services in libraries : One seminar was conducted on 'New trends in information dissemination in libraries' to keep the library and information professionals abreast of the new developments in the field of Information Dissemination to support the scholars in their efforts towards productive research. Presentations were made on Cloud computing, Applications of Social media for information dissemination, for and several more new technologies applicable in information dissemination services. Number of participants attended was 45.
- Awareness Programmes on NSLRC services: Noting that the services offered by the NSLRC are under utilized, a programme to raise awareness to the research and academic community on these services was conducted at the South Eastern University on 26 February. Several more presentations were made on NSLRC services at programmes organized by the HELLIS network (at PGIM), AGRINET (at RRI), University of Peradeniya and NSF Research division for potential grantees for NSF funding.

SUSTAINABLE UTILIZATION OF NATURAL RESOURCES



SUSTAINABLE UTILIZATION OF NATURAL RESOURCES

Establishment of Mannar Biosphere Reserve

Preparatory work was carried out to establish the Gulf of Mannar Biosphere Reserve, and possibilities were explored for the creation of an Adam's Bridge Archaeological Site in Palk Strait Ocean between India and Sri Lanka. A Sub-Committee consisting of ten members chaired by Prof. Mala Amarasinghe was appointed to work on the Mannar Biosphere Reserve (BR) nomination. Prof. Mala Amarasinghe was assigned the task of working on the nomination with the inputs from the relevant stakeholders and the members of the Sub-Committee.

Periodic Reviews of International Biosphere Reserves of Sri Lanka

Work on Periodic Reviews of the four International Biosphere Reserves (IBRs) in Sri Lanka, namely, Sinharaja, Bundala, Hurulu and KDN Complex was initiated and proceeded. Dr Jinie Dela, Mr H.G. Gunewardena and Mr K.W.P. Tillekerathna were appointed as Consultants to complete the Reviews. Maps were prepared for all 4 IBRs and stakeholder meetings were held at relevant Divisional Secretaries and Communities.



Nomination of Ussangoda as a Geopark

The stakeholder discussions were held at the Ministry of Environment and Natural Resources and field visits to Ussangoda were made to obtain final data for the nomination. The Ussangoda area was Gazetted as a National Park. The Sub-Committee working on the nomination finalized the nomination dossier for submission to UNESCO to be considered for nomination as a Geopark .

OPTIMIZING PHYSICAL &
HUMAN RESOURCES AND
PROCESSES AT NSF



Optimizing Physical & Human Resources and Processes at NSF

The NSF strives to strengthen the linkages and communication between the relevant government and statutory bodies in the external environment. An effort was made to develop the ability and productivity of our staff and maintained a result oriented open culture, which helped to uplift employee contribution effectively in order to achieve the mission of the NSF. Supporting Divisions liaise with the Scientific Divisions in executing its core functions for the smooth functioning of the organization.

Administration Division

For the purpose of providing the services required to fulfill the core functions of NSF at optimum level, the Administration Division discharges the following key functions;

- General Administration
- Human Resource Management
- Asset Management
- Logistical Requirements of NSF

The NSF has a staff strength of 126 including 30 Scientific Officers.

During the year 2013, Thirty Three (33) new staff members were recruited, Eight (08) members were resigned and Nine (09) members were retired.

To build up competent, skilled and efficient staff, the NSF provided education/training (Foreign/Local) programmes for improvement of the performance of the employees. The staff represented NSF at 36 local and 08 foreign meetings / workshops / Seminars Annex 10 & Annex 11. The details are annexed. The staff also participated in Seminars, Conferences and workshops organized locally. The National and Institutional Committees were also represented by the NSF Staff.

A list of the principal staff as at 31.12.2013 is annexed (Annex 12).

Staff Development Committee

The Staff Development Committee (SDC) was appointed for providing training opportunities to the staff to enhance their job - related knowledge and skills in order to develop the individual effectiveness. It is expected that the staff will make a significant contribution to the work of their Divisions and thereby to the NSF.

The following activities were done in 2013 through the SDC.

- A Training Manual for the NSF was prepared with the following components:
 - * Staff Development and Training Policy (Approved in 2011)
 - * Training Procedure
 - * Training Gap Analysis
 - * Training Plan
 - * Training Calendar
 - * Post Training Evaluation
 - * List of Resource Centres

- A Training Need Assessment was conducted for all staff members in order to identify their training needs through the respective Heads of Divisions.
- A Training Plan was prepared for 2013 based on the Training Need Assessment.
- Training Gap Analysis was conducted in order to identify the staff members' training gaps, based on their current duties and responsibilities, as per the instructions given by the Board of Management.
- Accordingly, a workshop was held for Junior Manager and above grade staff members to impart knowledge on Training Gap Analysis in order to prepare a comprehensive Training Plan for 2014. The workshop was conducted by Mr U A C Obeysekera - Fellow and Faculty Member of Institute of Personnel Management, Sri Lanka.
- The SDC facilitated 36 local training programmes for 116 staff members (Annex 9).

Finance Division

The finance Division administers all the financial activities, to provide an efficient financial service ensuring prompt and timely action relating to all financial activities of the Foundation, within the prevailing Financial Regulations. Main functions of the Finance Division are:

Maintenance of Books of Accounts such as Fixed Asset Register, General Ledger, Grant Ledger, Stock books etc.

- Preparation of all financial reports including annual financial statements, estimates etc., and submitting them to the relevant authorities on due dates.
- To make payments in relation to all activities conducted by the Divisions of the Institution.
- To make general payments such as salaries, overtime etc.
- Maintenance of the stores.
- Maintenance of publication stores and sale of publications, while organizing publication sales outlets at exhibitions, book fairs and sales desks at workshops.
- Liaise with the Finance Ministry and line Ministry Officials for obtaining funds for the Institution.

Printing Unit

The Printing Unit continued to support the activities of all the Divisions of the NSF. It undertook the printing of 18 publications, namely books, journals and 78 other printing works in 2013.

Information and Communication Technology Unit

The ICT Unit is responsible to maintain the seamless connectivity of the Foundation's electronic communication links, provide ICT infrastructure facilities to NSF activities, maintain electronic management information system and provide end-user IT support to NSF Staff.

During 2013, the ICT Unit upgraded some ICT facilities to improve the work performance of the organizational business process. Upgrading of Internet bandwidth, replacing of outdated computer facilities, refurbishing of NSF websites and upgrading of local area network devices can be highlighted as key activities. The development of integrated online Software Solutions by the University of Colombo School of Computing (UCSC) was also continued and the program was monitored by the ICT Unit

Internal Audit Unit

The main objective of the Internal Audit Unit is to maintain the internal control of the organization leading to good governance. Its activities are designed to add value and improve the organization's operations. Internal Auditor directly reports to the Chairman and the Board of Management of the NSF. To achieve the above objective, the Internal Audit Unit has been engaged in its duties during the year as per the approved Audit Plan with special emphasis on the following:

- Continuous checking on soundness and adequacy of internal control system of the NSF
- Review the progress of the scientific activities done by the NSF as per the Action Plan.
- Regular checking on financial and administrative activities.
- Checking on adherence to the established rules and regulations.
- Acting as the Convenor of the Audit and Management Committee (AMC).

Quality Management System (QMS)

QMS activities were continued during the year showing a moderate progress under the leadership of a Management Representative (MR). Several new members representing all the Divisions also joined to enforce the QMS Core Group. Main activities completed by the Core Group during the year are as follows.

- The documentation work required for implementation of the Quality Management System was successfully completed. Documentation work covered the revision of the Quality Manual, preparation of the Standard Operational Procedures (SOP), preparation of the Master List of Documents and the introduction of a new activity based coding system for easy identification of documents/records.
- Criteria were developed for evaluation of services provided to the NSF by various service provider categories.
- A short refreshing session on implementing the QMS was successfully conducted for the NSF staff members.
- A feedback form was prepared (in all three languages) to obtain customer views on the quality of the NSF services. The contents are to be used for evaluation of NSF services and their continual improvement.
- Implementation of "Thought for the Week" programme to improve quality related thoughts among the NSF staff
- Training on standards and the preparation of quality manual and internal auditing as per ISO 9001:2008 Quality Management System was provided to several core group members

ANNEXES

Grant No:	Grantee(s)/Institute	Project Title/Duration	Total Allocation (Rs.)
RG/2007/AG/02	Dr H.A. Dharmagunawardena Dr A. Pitawala Department of Geology University of Peradeniya Dr S. Madawala Weerasinghe Department of Botany University of Peradeniya	Assessment of ground water vulnerability in a highly productive coastal aquifer system in Kalpitiya peninsula due to natural and anthropogenic factors : a hydrogeochemical geophysical and biological approach 01 year	1,181,800
RG/2008/AG/01	Dr. D.G.N.G. Wijesinghe Department of Food Science & Technology Faculty Of Agriculture University of Peradeniya	Development of dietetic management and nutritional counseling software tool for Sri Lankan health care institutions 01 Year	950,000
RG/2009/AG/02	Dr. R. S. Wilson Wijeratnam Food Technology Division ITI, Ms. Namagal Krisnapillai Department of Botany University of Jaffna	Study on latex composition and sap burn injury of different varieties of mangoes 02 Years	1,906,080

Working Committee on Biotechnology

Grant No	Grantee/Institute	Project Title & Duration	Total Allocation (Rs.)
RG/2007/BT/03	Prof. Jennifer Perera Department of Microbiology Faculty of Medicine Dr. W. S. S. Wijesundera Department of Biochemistry & Molecular Biology Faculty of Medicine University of Colombo	Determination of drug resistant gene mutations among Rifampicin resistant strains of <i>M. tuberculosis</i> 3 Years	4,041,000
RG/2007/BT/04	Prof. W.A.J.M. De Costa Department of Crop Science Dr. Devika M. De Costa Department of Agriculture Biology Faculty of Agriculture University of Peradeniya	Identification of drought resistant varieties in Rice (<i>Oryza sativa</i> L.) using physiological and molecular methods 3 Years	2,892,392
RG/2007/BT/09	Dr. G.H.C.M. Hettiarachchi Department of Chemistry University of Colombo	Light regulated development in plants – Translational research in rice (<i>Oriza sativa</i> L.) 3 Years	2,317,045

Working Committee on Basic Sciences

Grant No	Grantee/Institute	Project Title & Duration	Total Allocation (Rs.)
RG/2008/BS/02	Prof. Priyani Ashoka Paranagama Department of Chemistry B. T. S. D. Kannangara Department of Botany University of Kelaniya	Exploring endolichenic fungi in Sri Lanka as novel sources of bioactive secondary metabolites 3 years	1,970,000
RG/2008/NANO/01	Prof. C A N Fernando Department of Electronics Wayamba University of Sri Lanka Kuliyapitiya	Langmuir-Bolgett films for dye sensitized solar cells as solar energy conversion devices 3 years	945,000.00
RG/2009/NANO /01	Prof. R.M.G. Rajapakse Department of Chemistry, University of Peradeniya	Development and characterization of functional textile materials with stain-resistant and antimicrobial activities 3 years	3,139,400.00

Working Committee on Engineering, Architecture & ICT

Grant No.	Grantee/Institute	Project Title /Duration	Total Allocation (Rs.)
RG/2011/CSIT/01	Dr. Srinath Perera Mr. Chanaka Rupasinghe University of Colombo School of Computing Colombo - 07	Ninithi Nano Studio modeling and simulation software 01 Year	306,000
RG/2011/ESA/02	Dr. K. T. M. U. Hemapala Department of Electrical Engineering University of Moratuwa Dr. R. A. R. C. Gopura Department of Mechanical Engineering University of Moratuwa	Agent based control and protection for smart grids 01 Year	311,000

Grant No.	Grantee (Name / affiliation)	Project Title & Duration	Total allocation (Rs.)
RG/2007/HS/03	<p>Dr. Mangala Gunatilake Department of Physiology, Faculty of Medicine, UOC</p> <p>Dr Omala Wimalaratne Department of Rabies Research and Vaccine quality control, Medical Research Institute</p> <p>Dr A Balasuriya National Institute of Health Sciences, Kalutara</p> <p>Dr.R.M.S.Pimburage National Institute of Health Sciences, Kalutara</p>	<p>Serological response following anti-rabies immunization in a representative canine population in Sri Lanka</p> <p>02 years</p>	3,104,215
RG/2007/HS/06	<p>Prof. Sunethra Atukorala Dr. Sharmila Jayasena Dr. Tharanga Thoradeniya Department of Biochemistry & Molecular Biology Fac. of Medicine University of Colombo</p>	<p>Evaluation of inflammatory markers and methylenetetrahydrofolate reductase 677c-T genotype in women with or without CAD</p> <p>2 years</p>	
RG/2011/HS/03	<p>Prof. Rohini De A. Seneviratne Department of Community Medicine Faculty of Medicine University of Colombo</p>	<p>Pre hospital care, functional disability, community reintegration and household cost profile of road traffic injury patients admitted to the National Hospital of Sri Lanka</p> <p>01 Year</p>	815,630
RG/2011/HS/21	<p>Dr P R P Perera Department of Biochemistry Faculty of Medical Sciences University of Sri Jayawardenepura</p>	<p>Establishment of serums Cystatin C reference range for healthy adults - a preliminary study</p> <p>01 Year</p>	597,500

		Agriculture & Food Science	Basic Sciences	Biotechnology & Bioethics	Environment & Biodiversity	Engineering, Architecture & ICT	Health Sciences	Library & Information Sciences	Social Sciences	S & T Policy Studies	Science Education	Total
01	Total no of ongoing grants as at 31.12.2013	24	17	22	20	03	24	-	02	02	-	114
02	Grants awarded	-	-	-	-	-	-	-	-	-	-	-
03	Grants completed	03	03	03	-	02	04	-	-	-	-	15
04	Grants withdrawn	-	-	-	01	-	-	-	-	-	-	01
05	Grants terminated	01	-	-	-	-	-	-	-	-	-	01
06	RSs appointed/to be appointed	04	04	04	03	03	-	-	-	-	-	18
07	RSs registered for postgraduate degree/ to be registered for post graduate degree	04	03	02	03	03	-	-	-	-	-	15
08	TAs appointed/to be appointed	03	01	01	-	-	-	-	-	-	-	05
09	Postgraduate degrees obtained	-	-	-	-	-	-	-	-	-	-	-
	PhD	-	-	-	-	-	-	-	-	-	-	-
	MPhil	-	05	04	02	-	03	-	-	-	-	14
	MSc	-	-	-	-	-	-	-	-	-	-	-
	MD	-	-	-	-	-	01	-	-	-	-	01
10	No of publications arising from grants (Foreign)	01	03	03	-	-	-	-	-	-	-	07
11	No of publications arising from grants (Local)	03	-	-	01	-	04	-	-	-	-	07
12	Communications	08	15	09	01	-	20	-	-	-	-	52

No	Applicants, Designation & Institute	Responsible Officer for the Equipment	Equipment	Total Amount
01	Prof. D. D. S. Kulathunga Dean Faculty of Science University of Kelaniya	Prof. D. D. S. Kulathunga Dean Faculty of Science University of Kelaniya	UV – Vis Spectrophotometer	Rs. 998,163/-
02.	Prof. D. D. S. Kulathunga Dean Faculty of Science University of Kelaniya	Prof. D. D. S. Kulathunga Dean Faculty of Science University of Kelaniya	Potentiostat – Galvenostat	Rs.1,875,420/-
03.	Dr. D. S. A. Wijesundara Director General Department of National Botanic Gardens Peradeniya	R. A. S. W. Ranasinghe Research Officer National Herbarium Dept. of National Botanic Gardens	Rotary Microtome with accessories	Rs.1,200,000/-
04	Prof. W. G. D. Dharmarathna Dean Faculty of Science University of Ruhuna	Dr C. N. Bogahawattha Dept. of Zoology University of Ruhuna	Bench top Centrifuge	Rs. 840,000/-
05	Prof. H. B. S. Ariyaratne Dean Faculty of Veterinary Medicine and Animal Science University of Peradeniya	Dr. Madura Munasinghe Dept. of Basic Veterinary Sciences University of Peradeniya	PCR Thermal Cylinder	Rs. 800,000/-
06	Prof. Rohan Jayasekara Dean Faculty of Medicine University of Colombo	Prof. A. J. Perera Dept. of Microbiology Faculty of Medicine University of Colombo	Gel Documentation System	Rs. 888,250/-
07.	Prof. Sudantha Liyanage Dean Faculty of Applied Sciences University of Sri Jayewardenepura	Prof. Siromi Samarasinghe Head Dept. of Chemistry Faculty of Applied Science University of Sri Jayewardenepura	UV-Visible Spectrophotometer	Rs. 2,530,820/-

Grant No:	Scholar /Institute	Project Title/Duration	Total Allocation (Rs.)
NSF/SCH/2013/01	Ms K M G Kaushalya Pamunuwa Department of Chemistry Faculty of Science University of Peradeniya	Liposomal preparations with improved properties for topical administration of ferulic acid and curcumin. 01 1/2 years	Rs.990, 000/-
NSF/SCH/2013/02	Mr Kanishka Weranga Paliakkara Department of Physics, Faculty of Science, University of Colombo	Investigation of distribution of zeros of wave functions and spontaneous breaking down of PT symmetry in Non-Hermitian Hamiltonian systems. 02 years	Rs. 1, 130, 000/-
NSF/SCH/2013/03	Mrs. Achala Indika Kamaladasa Department of Microbiology, Faculty of Medicine, University of Sri Jayawardenapura	Investigation of innate immune responses to dengue virus. 02 Years	Rs. 1, 320, 000/-
NSF/SCH/2013/04	Mr Vijayanathan Senthooan Department of Information Technology Faculty of Information Technology University of Moratuwa	Adaptable Algorithms for Image Steganography. 01 year	Rs. 125, 500/-
NSF/SCH/2013/05	Ms Rukshika Shalani Hewawasam Institute of Chemistry Rajagiriya	Production of bio ethanol as a renewable energy source using microbial fermentation with some selected microbial species, using economical substrates. 02 years	Rs. 1, 317, 000/-
NSF/SCH/2013/06	Mr K.A. Sameera Hemantha Kulathilaka Department of Information Technology Faculty of Information Technology University of Moratuwa Katubedda, Moratuwa	Improvement of characterization of the atherosclerotic plaque regions of coronary angiograms by using a computational vision technique 01 year	Rs . 139,000/-

NSF Research Awards

Annex 5

NSF Research Awards – 2010

Grantee/s	Project Title	Research Panel
Prof. Namal Priyantha Prof. Ayanthi Navaratne Department of Chemistry University of Peradeniya Research Student Mr C. B. Ekanayake	Investigation of environmental fate of some selected pesticides using electrochemical method	Basic Sciences

NSF Research Awards – 2011

Grantee/s	Project Title	Research Panel
Prof. R.M. G. Rajapakse Prof. D. T. B. Tennakoon Prof. H. M. N. Bandara Prof. B. M. R. Bandara Department of Chemistry University of Peradeniya Prof. B. S. B. Karunaratne Department of Physics Research Students 1. Mr. S. Wijeratne 2. Mr R. M. M. Y. Rajapakse 3. Queeni Saundararajah	Clay-polymer Nanocomposites: Investigation of their electrical, mechanical, thermal and green-catalytic properties for industrial and technological applications."	Basic Sciences
Prof. K. K. Y. W. Perera Dr Indra J. Dayawansa Department of Electronics & Telecommunication Engineering University of Moratuwa	Electronic devices for energy saving: Design & prototype fabrication	Engineering Sciences & Architecture

Certificates of Commendation -2010

Research Panel		Grantee/s
Dr Varuni A. Seneviratne Department of Physics University of Peradeniya Prof. M.A.K.Lakshman Dissanayake PGIS, Peradeniya <i>Research Student</i> Dr H. M. J. C. Pitawala	Optical and electrical studies in novel solid polymer electrolytes	Basic Sciences
Prof. Chintha Jayasinghe Department of Civil Engineering University of Moratuwa <i>Research Student</i> Mr K. P. Arandara	Durability properties of earth buildings	Engineering Sciences

Certificates of Commendation -2011

Grantee/s	Project Title	Research Panel
<p>Prof. L. Karunanayake Department of Chemistry Univ. of Sri Jayewardenepura</p> <p>Prof. G.M.K.B. Gunaherath Department of Chemistry Open University</p> <p>Dr K.G. Padmasiri</p>	Use of locally available fatty acids and their derivatives as plasticizers/stabilizers for PVC	Basic Sciences
<p>Dr Samantha Weerasinghe Department of Chemistry Univ. of Colombo Colombo 03</p> <p><i>Research Student</i> Mr W.M.R. Sanjeewa</p>	Investigation of atomic level description of the effect of denaturing agents on hydrophobic interaction by molecular simulation	Basic Sciences
<p>Prof. P.S. Wijesinghe</p> <p>Dr G.S. Padumadasa</p> <p>Dr T.S. Palihawadana Department Of Obsterics & Gynaecology University of Kelaniya Kelaniya</p>	Efficacy of surgical versus expectant management in incomplete miscarriage	Health Sciences

TWAS/NSF Young Scientist Awards 2013

Award Winner	Field
Dr Gathsaurie Neelika Malavige	Biology
Dr Nilwala Kottegoda	Chemistry

Supervisory Team	Project Title
<p>Dr Lakshman W Galagedara</p> <p>Dr M I M Mowjood Department of Agricultural Engineering Faculty of Agriculture University of Peradeniya Peradeniya</p>	<p>Assessment of groundwater contamination by landfill leachate with ground penetrating radar</p>
<p>Dr Meththika Vithanage Institute of Fundamental Studies Kandy</p> <p>Prof. S V R Weerasooriya Department of Soil Science</p> <p>Dr W M A T Bandara Department of Chemistry University of Peradeniya Peradeniya</p>	<p>Natural dissolution mechanisms of serpentinite soils from Sri Lanka: Leaching of chromium, nickel and manganese to the environment</p>
<p>Dr Chamari Hettiarachchi Department of Chemistry University of Colombo Colombo 03</p>	<p>Development of Arabidopsis STH2 gene over expressing transgenic rice (<i>Oryza sativa</i>) to improve its productivity</p>
<p>Dr M I M Mowjood Department of Agricultural Engineering Faculty of Agriculture University of Peradeniya</p> <p>Dr Meththika Vithanage Institute of Fundamental Studies Kandy</p>	<p>Pollution mitigation in landfill sites: removal of heavy metals using locally available filter materials</p>
<p>Dr N Y Hirimuthugoda Department of Animal Science Faculty of Agriculture University of Ruhuna</p> <p>Dr P A B D Alexander Department of Animal Production & Health Faculty of Veterinary Medicine and Animal Science University of Peradeniya</p> <p>Dr R J Illeperuma</p> <p>Dr A D De Silva</p> <p>Dr Neil Fernandopulle Genetech Research Institute (GENETECH) Kithulwatte Road Colombo 08</p>	<p>Morphological and molecular variations of <i>Oreochromis niloticus</i> and its hybrids present in selected reservoirs in Sri Lanka</p>

Supervisory Team	Project Title
<p>Prof. H M N Bandara</p> <p>Prof. R M G Rajapakse</p> <p>Dr G R A Kumara Department of Chemistry University of Peradeniya Peradeniya</p>	<p>Development of dye-sensitized solar cells using atomized spray pyrolysis technique</p>
<p>Dr G S P de S Gunawardena Division of Veterinary Pathology Faculty of Veterinary Medicine and Animal Science</p> <p>Prof. I B Gawarammana Department of Medicine Faculty of Medicine University of Peradeniya</p> <p>Prof. D J Weilgama Faculty of Medicine & Allied Sciences Rajarata University of Sri Lanka Saliyapura</p>	<p>Comparative <i>in-vivo</i> toxicity of the venoms of south Asian hump-nosed pit vipers (genus: <i>Hypnale</i>)</p>
<p>Dr Gathsaurie Neelika Malavige</p> <p>Prof. Neluka Fernando Department of Microbiology Faculty of Medical Sciences University of Sri Jayawardenepura Nugegoda</p>	<p>Role of <i>Staphylococcus aureus</i> in atopic dermatitis</p>
<p>Dr R R Ratnayake</p> <p>Prof. S A Kulasooriya Institute of Fundamental Studies Kandy</p> <p>Prof. D Nedra Karunaratne Department of Chemistry University of Peradeniya Peradeniya</p>	<p>Microorganisms and microbial biofilms as agents of cellulosic biodegradation of invasive weeds in Sri Lanka</p>

Name of Project Leader	Title of the project
Prof. K K D S Ranaweera University of Sri Jayewardenapura	Applications of novel techniques to minimize post harvest losses of five selected fruit and vegetable varieties.
Dr H L D Weerahewa The Open University of Sri Lanka	Food Security through adoption of pre-harvest technologies: Improving quality of fresh produce by soil application of Potassium and Silicon

	Name and Address	Conference /Workshop/ Seminar	Title of Abstract/ presentation
1	Dr E.M.L. Ekanayake Research Coordinator & Secretary Turtle Conservation Project Madakumbura Panadura	33 rd Sea turtle Symposium, Baltimore, USA 02- 08 February 2013	Multiple paternity of the green turtle (<i>Chelonia mydas</i>) population at Kosgoda turtle rookery, Sri Lanka assessed using microsatellite markers Oral Presentation
2	Prof. M.D.S. Lokuhetty Consultant Pathology and Professor in Pathology Department of Pathology University of Colombo Colombo	Emirates Surgical Pathology Conference, Abu Dabi, UAE 07– 09 February 2013	Diagnostic Terminology for Reporting Thyroid Cytology: Analysis of Inter – Observer Agreement between the format currently used in Sri Lanka and the Bethesda System. Oral Presentation
3	Mr R.A.D.M. Karunajeewa NO 50, Thunkinda Theligama	The 5 th Fajr International Invention & Innovation Exhibition 2013, Teheran, Islamic Republic of Iran 04 -07 February 2013	Safe Motor Cycle Side Stand Oral Presentation
4	Dr S.M.W.Ranwala Senior Lec turer Department of Plant Sciences University of Colombo Colombo	International Union of Forest Research Organization s (IUFRO) Risk Analysis Working party meeting – Risk Analysis of Forest Invasive Species, Chandigarh, India 27 February – 01 March 2013	A Risk assessment methodology for prioritizing forest biosphere Oral Presentation
5	Dr P M C S De Silva Senior Lecturer Department of Zoology University of Colombo Colombo	2 nd International Conference on Environmental Pollution , Restoration and Management , Hanoi , Vietnam 04 – 08 March 2013	Turn of the worms : Assessment of Bavistin FL (active ingredient – carbendazim) toxicity in Earthworm, <i>Eisenia Andrei</i> under tropical conditions. Oral Presentation

6	Dr S.M. Handunnetti Senior Lecturer in Immunology Institute of Biochemistry Molecular Biology & Biotechnology University of Colombo, Colombo 03	Immunology 2013, Honolulu, Hawaii, U.S.A 03 – 07 May 2013	High plasma TNF- α / IL - 10 ratios are associated with TNF 2 allele in severe P. falciparum malaria patients in Sri Lanka Oral Presentation
7	Dr TMWJ. Bandara Senior Lecturer Faculty of Applied Sciences Rajarata University of Sri Lanka	4th International Conference on Functional Materials & Devices 2013 (ICFMD - 2013) Penang, Malaysia 08 - 11 April 2013	Efficient and stable DSSCs using quasi solid state electrolytes and estimation of ion transport parameters using complex impedance analysis - Invited Lecture The study of effect of cation on the performance of dye sensitized solar cells using gel polymer electrolytes containing different ammonium salts - Oral presentation Invited Lecturer & Oral Presentation
8	Mr N.P.Liyanawaduge Senior Research Scientist Industrial Technology Institute	7th International Conference on Materials for Advanced Technologies (ICMAT 2013) Suntec, Singapore 30 June - 05 July	High field magneto transport properties in $Y_{1-x}Ca_x(Ba_{1-y}Sr_y)_2Cu_3O_{7-2\delta}$ system Oral Presentation
9	Dr R S W Wijeratnam (SUSRED Winner) Consultant & Team Leader ITI-CIDA/IDRC Collaborative Project for Enhancing Preservation of Fruits in South Asia Industrial Technology Institute	The VI International Conference on Managing Quality In Chains(MQUIC 2013)United Kingdom 02 - 05 Sep. 2013	A Liquid Formulation for the Biological Control of Anthracnose in Rambutan Oral Presentation
10	Mr T W M M Wijayasinghe Research Student Department of Botany Faculty of Science University of Peradeniya	Seed Ecology IV, Seeds and Future Shenyang, China 22 - 26 June 2013	Seed dormancy in plants of Sri Lankan mangrove communities Poster Presentation
11	Dr J Wanigasinghe Senior Lecturer Faculty of Medicine University of Colombo	30 th Annual Conference of the International League Against Epilepsy Montreal, Canada 23 -27 June 2013	1. Randomised clinical trial on outcome of epileptic spasms and EEG outcome with hormonal (Prednisolone and ACTH) therapies- Oral 2. Preliminary report on treatment response to anti epileptics in childhood epilepsies - Poster Oral & Poster Presentation

12	Dr K M G G Jayasuriya Senior Lecturer (Grade II) Department of Botany University of Peradeniya	Seed Ecology IV, Seed and Future, Shenyang, China 22 - 26 June 2013	Seed Dormancy and Storage Behaviour in Tropical Fabaceae; A Study of 100 Species from Sri Lanka Oral Presentation
13	Dr K Kannan Senior Lecturer Department of Mathematics and Statistics University of Jaffna	International Conference on Mathematics and Statistics - 2013 Paris, France 27 - 28 June 2013	Uniform Roe Algebras as Crossed Product and Invariant Action Oral Presentation
14	Dr T S Suresh (Not Participated) Senior Lecturer Dept. of Biochemistry Faculty of Medical Science University of Sri Jayawardenapura	International Symposium on Medicinal Plants and Natural Products Montreal, Canada 17 -19 June 2013	1. A study on possible acute toxicity and antihistamine effect of a novel preparation Sudarshana syrup in Wistar rats 2. Anti-inflammatory activity of selected Sri Lankan gymnosperms in Wistar rats Oral Presentation
15	Prof C A N Fernando (SUSRED Winner) Senior Professor Head of the Department Department of Electronics Faculty of Applied Science Wayamba University of Sri Lanka	BOND-21 Joint International Conference on Nanoscience, Engineering, and Management Penang, Malaysia 19 - 21 Aug. 2013	n-Cu ₂ O/Dye/p-CuI soild state photovoltaic cella exhibiting remarkably stable sensitized photocurrents with interlocked Langmuir-Blodgett(LB) dye films Oral Presentation
16	Dr S T Thoradeniya Senior Lecturer Department of Biochemistry and Molecular Biology Faculty of Medicine	20 th International Congress of Nutrition Granada, Spain 15 - 20 Sep. 2013	High Sodium and Potassium Intake Among Young Urban Women in Sri Lanka: Need for Educational Intervention Poster Presentation
17	Mr P.K.C.M. Wijewickrema Assistant Librarian Main Library Sabaragamuwa University of Sri Lanka Belihuloya	IFLA World Library and Information Congress 2013 Singapore 17 - 23 Aug. 2013	An ontology based fully automatic document classification system using an existing semi-automatic system Oral Presentation

18	Mr G.D.A. Nalaka Lecturer (Probationary) in Forestry Faculty of Agriculture Rajarata University of Sri Lanka Mihintale	11 th INTECOL Congress, Ecology : Into the next 100 years Royal Victoria Dock London, UK 18 - 23 Aug. 2013	1. Factors structuring vascular epiphyte communities in a tropical seasonal rain forest - Poster 2. Ecology of ancient decisions : Tank cascades system in island Sri Lanka - Oral Poster & Oral Presentation
19	Dr C.M. Wickramaarachchi Additional Medical Officer of Health MOH Office Dehiwala	3 rd International Public Health Conference & 20th National Public Health Colloquium Kuching Sarawak, Malaysia 27 - 29 Aug. 2013	Prevalence of metabolic syndrome (MetS) and combat related and psychological risk factors among military personnel aged 30-55 years in Sri Lanka light infantry regiment of Srilankan Army. Oral Presentation
20	Ms W.J.M.J.S.R. Jayasundara M.Phil Student Postgraduate Institute of Science University of Peradeniya Peradeniya	2 nd International Conference on Solar Energy Materials, Solar Cells and Solar Energy Applications Kuala Lumpur, Malaysia 22 - 24 Aug. 2013	Thermal and conductivity properties of pan based polymer electrolytes for possible application in photo electrochemical solar cells Oral Presentation
21	Prof. S. Abeysinghe Head of the Department Dept. of Botany University of Ruhuna Matara	10 th International Congress of Plant Pathology (ICPP 2013) Beijing, China 25 - 30 Aug. 2013	Improved phylogenetics for the Weligama coconut leaf wilt phytoplasma found in Sri Lanka Oral Presentation
22	Dr L.D.B. Suriyagoda Senior Lecturer Dept. of Crop Science University of Peradeniya Peradeniya	17 th International Plant Nutrition Colloquium Istanbul, Turkey 19 - 22 Aug. 2013	1. Interaction of limited soil phosphorus and potassium availability and moisture stress on growth of rice (<i>Oryza sativa</i> L.) 2. Growth and phosphorus nutrition of rice in clay and sandy soils under terminal drought Poster Presentations
23	Dr L.D.J.U. Senarath Senior Lecturer in Community Medicine Dept. of Community Medicine University of Colombo Colombo 08	IUNS 20th International Congress of Nutrition Grananda, Spain 15 - 20 Sep. 2013	Combating child malnutrition in Sri Lanka: Use of evidence based nutritional interventions Poster Presentation

24	Mrs W.A.S. Wijendra Research Officer Medical Research Institute, Colombo 08	Eighteenth International Symposium on the Problems of Listeriosis Goa, India 19 - 22 Sep. 2013	First report of <i>Listeria monocytogenes</i> Serotypes detected from milk and milk products in Sri Lanka Poster Presentation
25	Dr R.P. Hewawasam Senior Lecturer/ Head Dept. of Biochemistry Faculty of Medicine University of Ruhuna, Matara	International Conference on Natural Products and Health 2013 Nanyang Technological University, Singapore 05 - 07 Sep. 2013	Comparison of the toxicity of five Sri Lankan medicinal plants with hepatoprotective activity : a haematological, biochemical and histopathological evaluation Poster Presentation
26	Prof A.R. Wickremasinghe Professor of Public Health Faculty of Medicine University of Kelaniya, Dalugama, Kelaniya	Colloque International 2013 - Dynamiques urbaines et enjeux sanitaires Paris, France 11- 13 Sep. 2013	Non-communicable diseases are not confined to urban populations of Sri Lanka Oral Presentation
27	Ms C.S. Hettiarachchi Lecturer (Probationary) Dept. of Geography University of Peradeniya Peradeniya	18 th Internatioinal Congress on Nitrogen Fixation Miyazaki, Japan 14 - 18 Oct. 2013	Development of rhizobial inoculants which can reduce chemical fertilizer use in <i>Glycine max</i> (soybean) cultivation of Sri Lanka Oral Presentation
28	Ms K.D.K.Karunarhna Research Student The Open University of Sri Lanka Nawala	24 th Asian-Pacific Weed Science Society (APWSS) Conference Bandung, Indonesia 22 - 25 Oct. 2013	Phenotypic and genotypic variations among weedy rice (<i>Oryza sativa</i> f. <i>spontanea</i>) populations in Matara and Kurunagala districts, Sri Lanka Oral Presentation
29	Ms P.S. Perera Senior Lecturer Dept. of Biochemistry and Clinical Chemistry Faculty of Medicine University of Kelaniya, Ragama	Thalassaemia International Federation World Congress 2013 Abu Dhabi, UAE 20 - 23 Oct. 2013	Molecular characterization of β Thalassaemia intermedia in Sri Lanka Oral Presentation
30	Dr R.D.C.S. Ranadheera Senior Lecturer Faculty of Agriculture Rajarata University of Sri Lanka, Mihintale	V International Conference on Environment, Industrial and Applied Microbiology Madrid, Spain 02 - 04 Oct. 2013	Effect of dairy probiotic combinations on <i>in vitro</i> gastrointestinal survival, adhesion and cytokine secretion Poster Presentation

31	Ms A. I. Kamaladasa PhD Student, Center for Dengue Research Department of Microbiology, Faculty of Medical Sciences University of Sri Jayawardenepura	Asia Pacific Congress of Allergy, Asthma and Clinical Immunology, Taipei, Taiwan 14 - 17 Nov. 2013	Role of NKT cells in the pathogenesis of acute dengue infection Oral Presentation
32	Mr K.G.P.B. Karunarathne Research Officer Rice Research & Development Institute Dept. of Agriculture Batalagoda, Ibbagamuwa	7 th International Rice Genetics Symposium 2013 Manila, Philippine 05 - 08 Nov. 2013	Analysis of morphological variation among accessions of traditional rice " <i>KaluHeenati</i> " Poster Presentation
33	Mr A.P.A.Prasanga Lieutenant Commander Squadron Commander (RABS) in Western Naval Area Sri Lanka Navy, Colombo	The 4 th Asian Business and Management Conference 2013 & The 1 st Asian Conference on Politics, Economics & Law 2013 Osaka, Japan 21 - 24 Nov. 2013	Work life balance and job performance of the sailors in rapid action boat squadron of Sri Lanka navy Oral Presentation
34	Ms T.S.R. Fernando Lecturer (Probationary) Uva Wellassa University of Sri Lanka	International Conference on Life Science and Biological Engineering 2013, Osaka, Japan 07- 09 Nov. 2013	Bovine gastrointestinal parasitism with special emphasis on cryptosporidiosis in Badulla District of Sri Lanka Oral Presentation
35	Mr H.W.K.S. L. Kumara Mphil Student Board of Studies in Agriculture Faculty of Post Graduate Studies University of Ruhuna, Matara	International Plant Breeding Congress Antalya, Turkey 10 - 14 Nov. 2013	Inoculation effect of endophytic bacterium (<i>Bacillus sp.</i>) isolated from wild rice ' <i>Oryza nivara</i> ' on Sri Lankan traditional rice variety 'Ma wee' Oral Presentation
36	Dr G A P Chandrasekara Senior Lecturer, Head of the Department Department of Applied Nutrition Wayamba University of Sri Lanka, Makandura	Annual Meeting of the International Society for Nutraceuticals and Functional Food Taipai, Taiwan 05 - 09 Nov. 2013	1)Effect of parboiling on the antioxidant activities of sorghum and finger millet grains 2)Phenolic content and antioxidant activities of raw and processed roots and tuber crops Oral Presentation
37	Ms N.H.L. Pradeepa Senior Research Officer Plant Pathology Division Tea Research Institute Talawakelle	19 th Australasian Plant Pathology Conference Auckland, New Zealand 25 - 28 Nov. 2013	Recent emergence of fusarium dieback of tea (<i>Camellia sinensis</i>) in Sri Lanka and its potential link with tea shot hole borer (<i>Euwallacea fornicates</i>) Oral Presentation

38	Prof. J.M.U.K. Jayasinghe Professor of the Dept. of Agribusiness Management Wayamba University of Sri Lanka Kuliyapitiya	Eighth Dubai International Food Safety Conference Dubai, UAE 18 - 19 Nov. 2013	Firms realization of expectations on adopting a food safety and quality metasystem: what can we learn from agri-food processing sector in Sri Lanka Oral Presentation
39	Prof. S.R. De Alwis Seneviratne Director, Curriculum Implementation Unit Faculty of Medicine University of Colombo Kynsey Rd, Colombo 08	The 4 th Asia Pacific Conference on Public Health (APACPH) Nha Trang, Viet Nam 21 - 22 Nov. 2013	1 Climate factors and dengue fever in selected areas of Sri Lanka 2 Climate factors and occurrence of dysentery in Sri Lanka Oral Presentation
40	Dr W.A.D.P. Ratnasekera Senior Lecturer Dept. of Agricultural Biology, Faculty of Agriculture University of Ruhuna Mapalana, Kamburupitiya	7 th International Rice Genetics Symposium Manilla, Philippine 05 - 08 Nov. 2013	Phylogenetic relationship among weedy, wild and cultivated species of Sri Lankan rice based on morphological traits Oral Presentation
41	Mr W.D.M. Sampath Research Officer Rubber Research Institute of Sri Lanka Telawala Rd, Ratmalana	Rubber Conference 2013 Bangkok, Thailand 16 - 18 Dec. 2013	Evaluation of dynamic vulcanization of natural rubber and low density polyethylene blend Poster Presentation
42	Mr K.Venugoban Instructor in Computer Technology University of Jaffna, Jaffna	The 2 nd International Conference on Information and Intelligent Computing - 2013 (ICIIC 2013) Kuala Lumpur, Malaysia 29 - 30 Dec. 2013	Image Classification of Paddy Field Insect Pests using Gradient-based Features Oral Presentation
43	Ms P.R.D.Perera Scientific Assistant Dept. of Food Science and Technology University of Sri Jayawardenapura Nugegoda	5 th Global Summit on Medicinal and Aromatic Plants Miri, Sarawak, Malaysia 08 - 12 Dec. 2013	1 <i>In vitro</i> antiglycation activity of some medicinal plants used in diabetes mellitus 2 Antiglycation and antioxidant activities of a ready to serve herbal drink made from <i>Syzygium cumini</i> Oral Presentation

#	Name	Type of OSTP Grant	Name of the Course, Country and Duration
1	Dr B.S. Dassanayake Senior Lecturer in Physics, Department of Physics, University of Peradeniya, Peradeniya.	NSF Travelling Fellowship	One month, intensive R & D training project on CdTe solar cells, Sivananthan Laboratories, Inc., Bolingbrook, Illinois, USA. Duration: 1st -30th April, 2013
2	Mr S.S.R. Samarakoon Scientific Assistant (Cell Biology), Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo, Cumarathunga Munidasa Mawatha, Colombo 03.	NSF Training Scholarship	Advanced Training on Frontiers in Cancer Stem Cells, Ponce School of Medicine and Health Sciences, Ponce, Puerto Rico. Duration: 03rd - 08th February 2013
3	Dr A. R. Kumarasinghe Senior Scientist, Sri Lanka Institute of Nanotechnology (SLINTEC), Lot 14, Zone 1, EPZ, Biyagama, Malwana.	NSF Travelling Fellowship	School on Modern Topics in Condensed Matter Physics, Nanyang Technological University (NTU), Singapore. Duration: 28th of January to 8th of Feb 2013
4	Ms W.R. Amarasekara Research Student, Human Genetics Unit, Faculty of Medicine, Kynsey Road, Colombo 08.	NSF Training Scholarship	ICGEB course on 'Mouse Genetics-Models for Human Diseases', Trieste, Italy. Duration: 08th - 11th April 2013
5	Dr W.A.N.Y. Silva Probationary Lecturer, Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda.	NSF Training Scholarship	'Frontiers in Reproduction' at the Marine Biological Laboratory (MBL), 7 MBL Street, Woods Hole, MA 02543-1015, USA. Duration: 28th April - 08th June 2013
6	Dr N.S. Kottearachchi Senior Lecturer, Department of Biotechnology, Faculty of Agriculture and Plantations Management, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP).	NSF Travelling Fellowship	Workshop on 'Strategic Approaches in the Evaluation of the Science Underpinning GMO Regulatory Decision - making', ICGEB, Padriciano 99 I-34149 Trieste, Italy. Duration: 01st - 05th July 2013
7	Prof. N.D. Karunaweera Professor of Parasitology and Head of Department, Department of Parasitology, Faculty of Medicine, University of Colombo.	NSF Travelling Fellowship	05th World Congress Leishmaniasis and visit to laboratory of Prof. Marcelo U. Ferreira, Pernambuco, Brazil. Duration: 13th - 27th May 2013

8	Dr S.D.S.S. Sooriyapathirana Senior Lecturer, Department of Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya, Peradeniya.	NSF Travelling Fellowship	Theoretical and Practical course on "Bioinformatics: Computer Methods in Molecular and systems Biology", ICGEB, Trieste, Italy. Duration: 24th - 29th June, 2013
9	Dr E.Y.K. Lokupitiya Senior lecturer, Faculty of Zoology, University of Colombo.	NSF Travelling Fellowship	Summer Soil Institute, Colorado State University (CSU), USA. Duration: 07th - 20th July 2013
10	Prof. J.M.S. Bandara Research Professor, Institute of Fundamental Studies, Hantana Road, Kandy.	NSF Training Fellowship	Renewed Research Stay in Germany, Department of Physics, Freie University of Berlin, Germany. Duration: 01st August - 31st October 2013
11	Dr D.C. Ranasinghe Lecturer, Allied Health Sciences Unit, Faculty of Medicine, University of Colombo.	NSF Training Scholarship	Short Course on 'Prevention Strategies for Non-communicable Diseases'. Department for Continuing Education, Continuing Professional Development Centre, University of Oxford, UK. Duration: 1st - 6th September 2013
12	Prof. S.N. Surendran Professor in Zoology, Department of Zoology, University of Jaffna, Jaffna.	NSF Training Scholarship	Training and Research in Insect Transformation - Targetting Salivary Gland Functions Using Gene Trap Technology. Institute of Bioscience and Biotechnology Research, College Park, University of Maryland, Shady Grove, Rockville, Maryland, USA. Duration: 23rd November 2013 to 22nd November 2014
13	Eng. Ms. J.M.J.W. Jayasinghe Lecturer (Probationary), Department of Electronics, Faculty of Applied Science, Wayamba University of Sri Lanka, Kuliyaipitiya.	NSF Training Scholarship	A Short Term Overseas Training Programme as a Part of the PhD Programme. Universitat Ramon Llull, Spain. Duration: 07th Oct.- 02nd Nov. 2013
14	Dr G.N. Malavige Senior Lecturer and Head, Department of Microbiology, University of Sri Jayawardnapura, Gangodawila, Nugegoda.	NSF Travelling Fellowship	Investigating the pathogenesis of severe Dengue, University of Oxford, UK. Duration: 28th Oct. - 08th Nov. 2013
15	Dr P.K. Perera Senior Lecturer, Department of Allied Sciences, Institute of Indigenous Medicine, University of Colombo.	NSF Travelling Fellowship	Diploma Course on Research and Development of Products to meet Public Health Needs, Nagasaki University, Japan. Duration: 28th Oct. - 09th Nov. 2013

16	Prof. L.K. Senaratne Professor in Botany, Department of Botany, The Open University of Sri Lanka, Nawala, Nugegoda.	NSF Training Fellowship	Finalizing the checklist of coastal plants of the sandy seashore vegetation of Sri Lanka, University of California, USA. Duration: 01st May - 31st July 2014
17	Mr K.S. Mannatunga Lecturer (Probationary), Department of Physics, Faculty of Applied Sciences, University of Sri Jayawardenepura, Nugegoda.	NSF Training Scholarship	International Training Workshop on FPGA Design for Scientific Instrumentation and Computing, Abdus Salam International Centre for Theoretical Physics (ICTP), Italy. Duration: 11th - 22nd Nov. 2013
18	Dr A.U. Gamage Registrar in community medicine, Department of Nutrition, Ministry of Health, Colombo.	NSF Training Scholarship	Health Economics Research Methods, Chulanlongkorn University, Bangkok, Thailand. Duration: 23rd Dec 2013 - 17th Jan 2014
19	Mr R.S. Gunasekara Deputy Director of Customs, Sri Lanka Customs, No. 40, Main Street, Colombo 11.	NSF Travelling Fellowship	Determine the Levels of Genetic Variations between the populations of Vanda testellata(Roxb) Hook.ex, Jodrell Laboratory, Royal Botanic Gardens, Kew, UK. Duration: 07th - 27th January 2013

Name of the Employee	Title of the Programme	Period
Mr. Janaka Karunasena Ms. Nasheera Paranamana Ms. Thilina Kandanamulla	Training Seminar on Green Chemistry	4 th January, 2013
Mrs. A J N Silva Ms. Tharaka Weerasena	Workshop on maintaining personal files Prag Services Pvt Ltd	22 nd & 23 rd January, 2013
Ms. Priyani Samaranayake Ms. Priyanka Bamunendra Ms. Pushpa Ellapallage Mr. Yohan Chandeera	Staff training for Awareness Programme, Sri Lanka Public Sector Accounting Standards	30.01.2013
Mr. E M D C B Ekaayake	Staff training for Stores Management ICTAD Institute	21.02.2013
Ms. Anusha Amarasinghe Dr. C G Yapa Dr. S Panawala Ms. Amali Ranasinghe Ms. Mahesha Nadugala	Conference on “ Sri Lanka Water Expo – 2013 “	20 st March - 23 rd March, 2013
Ms. Subani De Silva Ms. S A P Madurangi Ms. Thilina Kandanamulla	Staff Training for Quality Management System (QMS)	22.04.2013 23.04.2013 06.05.2013 07.05.2013
Ms. Jayajeewani	Staff Training for Annual Stock Verification & Disposal Procedure	22.05.2013
Ms. Aruny Jayathissa	Workshop for Information Professionals of the next Generation	11 th June, 2013
Ms. Thilina Kandanamulla	Seminar on Solid Waste Management – conducted by Institute of Chemical Science	13 th June, 2013
Ms. P Warakagoda	Seminar on Solid Waste Management – conducted by Institute of Chemical Science	13 th June, 2013

Ms. Mahesha Nadugala	National Symposium on Metrology for a Sustainable Development	26 th June 2013
Mr. Anuruddha	International Conference on Driving Research Towards Economy: Opportunities and Challenges	5 th July, 2013
Ms. Christine Dasanayake	International Conference on Driving Research Towards Economy: Opportunities and Challenges	5 th July, 2013
Ms. Mahesha Nadugala	International Conference on Driving Research Towards Economy: Opportunities and Challenges	5 th July, 2013
Mr. J G Shantha Siri	International Conference on Driving Research Towards Economy: Opportunities and Challenges	5 th July, 2013
Ms. Nadeeja Wickremarachchi	International Conference on Driving Research Towards Economy: Opportunities and Challenges	5 th July, 2013
Miss Uthpala Karunaratne Ms. Abhimani Ranatunga Dr. Inoka Sandanayake Ms Sachini Amarasekera	Staff Training for workshop on improving the Quality of Journals.	10 th July, 2013
Ms. Mahesha Nadugala	Inculcating Ergonomics in the Sri Lankan Setting	10 th of July, 2013
Ms. Udeshika Weerakkody	Inculcating Ergonomics in the Sri Lankan Setting	10 th of July, 2013
Mr. Janaka Karunasena	Inculcating Ergonomics in the Sri Lankan Setting	10 th of July, 2013
Ms Priyanwada Warakagoda	3 rd short course on Data Analysis	12 th - 19 th July, 2013

Mr. Chanaka Wickremasinghe	1 st Workshop on Campus Network Basics and Trouble Shooting	19 th & 20 th July 2013
Dr. P R M P Dilrukshi	International Symposium on Traditional Medicine (Ayurveda)	13 th July, 2013
Ms. Chamika Dharmasena	International Symposium on Traditional Medicine (Ayurveda)	13 th July, 2013
Mrs. Rasika Priyanganie	Certificate Course on Graphic Design Sri Lanka Institute of Printing	Commenced on 21.07.2013
Ms. Maduka Senarathne	Short Course on Carbon Market	18 th & 19 th July, 2013
Ms. Isuri Dharmasoma	Seminar on Sample Size Computation of a Statistical Study	05 th August 2013
Mr. Dilan Rasika	Seminar on Sample Size Computation of a Statistical Study	05 th August, 2013
Ms. Nadeera Jayaweera	Training of Evaluators for All Island School Laboratory Competition	12-13 August, 2013
Mr. Pradeep Sapumohotti	Salary Management and Salary Conversion	3 rd September, 2013
Mr. Saman Sujeewa	Short course on Plumbing work	Five Days commencing from 24.08.2013
Ms. Priyanwada Warakagoda	Short Course on Sample Techniques	3 days programme commencing from 4 th September - 6 th September, 2013
Ms Nadeera Jayaweera	Training of Evaluators for all Island School Laboratory Competition	17 th & 18 th September, 2013
Dr. Inoka Sandanayake	Training Seminar on Scientific Aspects of Gem Minerals	25 th September, 2013

Mrs Christine Dasanayake	National Conference on livelihoods, Biodiversity & Eco System Services	26 th - 27 th September, 2013 Sri Lanka Foundation Institute
Prof. W L Sumathipala	Outward Bound Workshop	27 th - 29 th September, 2013
Mrs H A U Amarasinghe	Outward Bound Workshop	27 th - 29 th September, 2013
Dr S I Wickremasinghe	Outward Bound Workshop	27 th - 29 th September, 2013
Mr. L B Ekanayake	Training on Salary Management & Salary Conversion	To be held on 10 th October, 2013
Mrs. D L Sirimathie	Training on Salary Management & Salary Conversion	To be held on 10 th October, 2013
Mr. Saman Sujeewa	Training on Salary Management & Salary Conversion	To be held on 10 th October, 2013
Mrs P A S F Perera	Workshop on Library Management Software	7 th October, 2013 - 10 th October, 2013.
Mrs K A Aruny Jayatissa	Workshop on Library Management Software	7 th October, 2013 - 10 th October, 2013.
Ms. Thilina Kumari Kandanamulla	Training Programme on Preparation of Greenhouse Gas Inventory conducted by Ministry of Environment & Renewable Energy (1 st Day)	25 th October, 2013
Ms. Thilina Kumari Kandanamulla	Training Programme on Preparation of Greenhouse Gas Inventory conducted by Ministry of Environment & Renewable Energy (2 nd Day)	30 th October, 2013

Junior Managers & Above categori	Workshop on Training Gap Analysis (51 staff members participated)	31.10.2013
Mrs R M M Jayajewani	Workshop on effective Internal Auditing – Skills Development Fund	7 th November, 2013
Mr. Chinthaka Ekanayake	Basic Stores Management Training – Prag Service Institute	20 th November, 2013
Ms. Thilina Kumari Kandanamulla	Training Programme on Mitigation Assessment and apply modeling tools of UNFCCC – Ministry of Environment & Renewable Energy	27 th - 29 th November, 2013
Mr. Saman Sujeewa Ipalawaththa	Training Programme on Record Room Management	26 th November, 2013
Mr. H M M Perera	International Conference on Advances in ICT for Emerging Regions	12 th December, 2013

Name of the Officer	Title of the Training Programme	Country , Duration
Mrs H A U Amarasinghe	Rountable Meeting to Promote Collaboration on Science, Technology, Engineering and Mathematics (STEM)	19 th January, 2013- 20.01.2013 Bangkok, Thailand
Mr J G Shantha Siri	Regional Meeting of the Regional Project funded by International Development Research Centre, Canada which will be held in Pakistan	27 th January, 2013 – 30 th January, 2013 Pakistan
Mrs H A U Amarasinghe	International Advisory Committee for Biosphere Reserves (IACBR)	11 th – 13 th March, 2013 Paris, France
Mrs P A S F Perera	Fourth Annual Meeting of the Confederation of Open Access Repositories (COAR)	6 th May, 2013 – 10 th May, 2013 Istanbul, Turkey
Dr S A V Moorthy	South Asia Biosafety Conference	17 th September, 2013 - 20 th September, 2013,India
Dr S I Wickremasinghe	2013 Global Research Council – Asia Pacific Regional Meeting on “Open Access & Developing the next Generation”	16 th - 20 th November, 2013 South Korea
Ms U T Karunarathne	2013 Global Research Council – Asia Pacific Regional Meeting on “Open Access & Developing the next Generation”	16 th - 20 th November, 2013 South Korea
Mrs L M N S Nadugala	5 th ICSU Regional Consultation “Future Earth in Asia and the Pacific”	25 th November, 2013 Seoul, Korea
Miss V N Perera	International Conference on Asia – Pacific Digital Libraries	8 th - 12 th December, 2013
Mrs. R P Sugathadasa	International Conference on Asia – Pacific Digital Libraries	8 th - 12 th December, 2013

Chairperson

Prof. Sirimali Fernando
MBBS (Colombo). Dip. Med Micro (Colombo), M.Sc (London)

Up to 07.07.2013

Chairman

Prof. W L Sumathipala
Ph.D, FIP, CPhys

From 08.07.2013

Director

Ms H A U Amarasinghe
B.Sc (Ruhuna), M.Sc (Colombo)

From 01.02.2012

Additional Director

Dr Seetha I Wickremasinghe
B.Sc Special (Hons.) (Peradeniya), M.Sc (Agric.) (Peradeniya),
Ph.D (JNU, New Delhi)

From 17.06.2013

Research Division

Dr C G Yapa
B.Sc Special (Hons.) ,(Colombo) Ph.D (Colombo)

Head / Principal Scientific Officer

Mr S M A W Anuruddha
B.Sc (Hons.) (Colombo), M.Sc (Colombo)

Principal Scientific Officer
(w.e.f. 11.11.2013)

Dr S A V Moorthy
B.Sc (Jaffna). M.Sc (Colombo), Ph.D (Colombo)

Senior Scientific Officer

Dr P V S Panawala
B.V.Sc (Peradeniya), M.Phil (Peradeniya)

Scientific Officer

Ms D N Jayaweera
B.Sc (Hons.) (Sri Jayawardenepura)

Scientific Officer

Dr H I Sandanayake
B.V.Sc (Peradeniya)
Ms Amali Ranasinghe
B.Sc (Hons.) Bangalore, M.Sc (Peradeniya)

Scientific Officer

Scientific Officer

Ms Nasheera Paranamana
B.Sc. Agric. (Hons) (Ruhuna)

Scientific Officer

Mr M A Lankathilake
B.Sc (Hons.), (Sri Jayawardenepura)

Scientific Officer
(w.e.f. 23.05.2013)

Ms Amali Bandara
B.Sc (Bangalore)

S & T Officer up to 15.02.2013

Mrs A D D S Amarasekara
B.Sc (Hons) (Bangalore), M.Sc (Colombo)

Scientific Officer
(up to 19.08.2013)**Science and Technology Policy Research Division**

Dr Seetha I Wickremasinghe
B.Sc Special (Hons.) (Peradeniya), M.Sc (Agric.) (Peradeniya),
Ph.D (JNU, New Delhi)

Head

Dr P R M P Dilrukshi
B.Sc Special (Hons.) (Peradeniya), Ph.D (Peradeniya)

Senior Scientific Officer

Ms Chamika Dharmasena
B.Sc Special (Hons.) (Colombo)

Scientific Officer

Ms U Y I L Dharmasoma B.Sc Special (Hons.) (Sri Jayawardenepura)	Scientific Officer (w.e.f. 03.06.2013)
Mr D M Dilan Rasika B.Sc Special (Agric.) (Hons.) (Peradeniya)	Scientific Officer (w.e.f. 03.06.2013)
International Liaison Division	
Ms W L C Dasanayake B.Sc Agric. (Hons) (Peradeniya), M.Sc (Peradeniya) M.Sc. (Japan), M.Eng. (Germany)	Scientific Officer
Ms E M D C K Ekanayake B.Sc Agric. (Hons) (Peradeniya), M.Sc (Peradeniya)	Scientific Officer
Ms A M N S Nadugala B.Sc Agric. (Hons) (Peradeniya) M.Sc (Asian Institute of Technology)	Scientific Officer
Ms K A T K G Kandanamulla B.Sc Agric. (Hons.) (Ruhuna), M.Sc (Colombo)	Scientific Officer
Ms W A U I Weerakkody B.Sc (Hons.), Colombo, M.Sc (Keele)	Scientific Officer (w.e.f. 03.06.2013)
Technology Division	
Dr T F Dias M.Sc (Hons) (Moscow), Ph.D (Moscow),	Head / Senior Scientific Officer
Dr S R Fernando M.Sc (Hons) (Moscow), Ph.D(Moscow), MBA (Colombo)	Scientific Officer up to 31.05.2013
Mr J G Shantha Siri B.Sc (Hons) (Colombo), MSc (Kelaniya)	Senior Scientific Officer
Ms D N Wickremaarachchi B.Sc (Hons) (Open University), M.Sc (Sri Jayawardenepura)	Scientific Officer
Ms S A P Madurangi B.Sc Agric. (Hons) (Ruhuna), M.Phil (Ruhuna)	Scientific Officer up to 01.09.2013
Ms M M G N K Abhayaruwan B.Sc Special (Hons) (Colombo)	S & T Officer up to 15.02.2013
Ms P S Warakagoda B.Sc Agric. (Hons.) (Ruhuna), M.Phil (Ruhuna)	Scientific Officer (w.e.f. 23.05.2013)
Director's Office	
Ms Dilu S Gamage Graduateship in Chemistry (I.Chem), M.Sc (Chem.) (Australia National Uni.)	Scientific Officer up to 09.05.2013
Ms M A D D Munasinghe B.Sc Special (Agric.) (Hons.) (Peradeniya)	Scientific Officer (w.e.f. 10.06.2013)
* Information Knowledge Division	
Ms. P A S F Perera B.Sc (Colombo), M.Sc (UK)	*Head (S.P.C., NSLRC, Printing Unit) Principal Information Officer)
(I) Science Popularization Centre (SPC)	
Mr K G Janaka Karunasena B.Sc Agric. (Hons.) (Peradeniya) , M.Phil (Agric.) (Peradeniya)	Senior Scientific Officer
Ms W M U K Rathnayake B.Sc Special (Hons) (Wayamba)	Scientific Officer
Ms M N S Jayaweera B.Sc Agric. (Hons) (Peradeniya), M.Sc (Peradeniya)	Scientific Officer
Ms Uthpala Karunarathne B.Sc Special (Hons) Kelaniya	Scientific Officer
Ms M D Senarathne Graduateship in Chemistry (I.Chem.)	Scientific Officer

Ms R A A R Ranatunga B.Sc Special (Hons) (Colombo)	Scientific Officer
Ms J N Wijesinghe B.Sc Special (Hons.), (Sri Jayawardenepura)	Scientific Officer (w.e.f 04.07.2013)
(ii) National Science Library and Resource Centre (NSLRC)	
Ms V N Perera B.Sc (Open University), ASLLA	Information Officer
Ms A Tennakoon B.Sc (Kelaniya)	Information Officer
Ms R P Sugathadasa B.Sc (Sri Jayawardenepura)	Information Officer
Ms Jayanthi Weerathunga ASLLA	Information Officer
Ms K A Aruny Jayathissa B.Sc (Hons) (Peradeniya)	Information Officer (w.e.f. 02.05.2013)
(iii) Printing Unit	
Mr K P Senanayake	Printing Manager
* (SPC, NSLRC, Printing Unit have been amalgamated in to one Division as Information and Knowledge Division)	
Administration Division	
Mr P Sapumohotti B.Sc (Peradeniya)	Senior Administrative Officer
Ms W S M De Silva BBA (Hons.) (Ruhuna)	Human Resource Development Officer
Mr S C Senevirathne B.Sc (Sri Jayawardenepura)	S & T Officer (up to 15.02.2013)
Ms B T Wickremasinghe B.Sc (Sri Jayawardenepura)	Accounting Assistant
Finance Division	
Miss T D P P Samaranyake Professional Part II of ICASL	Senior Accountant
Ms E M P Bamunendra B(Com.) (Sri Jayawardenepura), Licentiate Certificate of ICASL	Accountant
Ms Y J Pathirana, MAAT	Accounts Officer (up to 04.10.2013)
Ms P N K Wickremarachchi	Accounts Officer (up to 01.11.2013)
Internal Audit Unit	
Ms. M M Jayajeewani B.Sc.B.Ad. (Special) (Sri Jayawardenepura)	Internal Auditor
Mr L B Ekanayake Bachelor of Labour Education (B.L.E.)	Internal Audit Officer
IT Unit	
Mr. H M M Perera MBCS	Information Technology Manager (w.e.f . 01.10.2013)
Mr W A B Fernando B.Sc (Hons.)	Network Administrator (w.e.f 15.10.2013)
Confidential Secretaries	
Ms Ayomi Palihawadana	Confidential Secretary (Chairman's Office)
Ms Seetha Wijesinghe	Confidential Secretary (Director's Office) Up to 03.11.2013
Ms H H S M R Wijenayake B(Com.) (Sri Jayawardenepura)	Confidential Secretary (Director's Office) (w.e.f. 02.12.2013)

Recruitments during the year 2013**Annex 13**

33 employees have been recruited to permanent cadre of NSF

(Scientific Officers – 8, Information Officer – 01, Network Administrator –01, Confidential Secretary – 01 Graphic Design Asst. – 04, Management Assistants – 10, Library Asst. – 01, Office Aid -01, Drivers- 02, Electrician - 01, Plate Maker - 01, Machine Operator -01, Printing Attendant - 01)

Resigned during the year 2013

Ms Rukshi Lakmali	(Management Assistant - 01.03.2013)
Ms Tharaka Weerasena	(Management Assistant - 25.03.2013)
Ms. Dilu Gamage	(Scientific Officer - 09.05.2013)
Ms Sachini Amarasekera	(Scientific Officer - 19.08.2013)
Ms Deepika Fernando	(Management Assistant - 15.08.2013)
Ms Dimuthu Jayamali	(Management Assistant - 01.11.2013)
Ms S A P Madurangi	(Scientific Officer - 01.09.2013)
Mr J M N Jayasundara	(Printing Attendant - 31.12.2013)

Retired during the year 2013

Mr. G Munasinghe	(Management Assistant - 31.01.2013)
Mr C Atapattu	(Office Aid - 30.04.2013)
Mr T A Pathmasiri	(Machine Operator - 30.04.2013)
Mr. B G Senevirathne	(Book Binder - 30.06.2013)
Ms. Y J Pathirana	(Accounts Officer - 04.10.2013)
Mrs Renuka Mapatuna	Management Assistant - 21.10.2013)
Ms P N K Wickremarachchi	(Accounts Officer - 01.11.2013)
Ms. Seetha Wijesinghe	(Confidential Secretary - 03.11.2013)
Mr. W Somadasa	(Printing Attendant - 28.10.2013)

FINANCIAL STATEMENTS

Observations of the Accounting Officer on Performance 2013

Recurrent Expenditure

	Rs.000'	
	Estimate	Expenditure
Personal Emoluments	76,140	60,396
Other Recurrent	<u>28,860</u>	<u>37,160</u>
	<u>105,000</u>	<u>97,556</u>

Funds received from the Treasury for Recurrent Expenditure Rs. 84, 661/=

Capital Expenditure	Estimate	Funds Received from the Treasury	Expenditure
Object Code - 133-02-05-3-2201	250,000	135,115	139,908
Supplementary Allocations			
IDRC	3,583		
Revenue	273		

Details of Capital Expenditure as against the funds received during the year

Description	Expenditure 2013
1. Grants for Research & Other Scientific Work	70,520
2. Science & Technology Policy Research Division	2,313
3. Technology Division	24,463
4. National Science Library & Resource Centre	7,242
5. Science Popularization Division	13,248
6. International Liasion Division	2,722
7. Informatin Technology Division	5,764
8. Office Furniture Fittings & Equipment	18,788
9. Rehabilitation of Capital Assets	161
10. Director's Office Vote	1,118
11. Overseas Special Training Programme	4,165
TOTAL	150,504

Financial Issues

NSF is a funding organization which is solely dependent on the government funds. During year 2013, Department of National Budget recommended to releasing Rs. 105Mn for Recurrent expenditure & Rs. 250 Mn for Capital Expenditure. Department of Treasury Operatoin released Rs. 84,661,000/= for Recurrent Expenditure and Rs. 135,115,443/= for Capital Expenditure. As such NSF was able to fund only a few grants, which were approved during the latter part of 2013.

Nevertheless, NSF has achieved a significant success over the programmes which were continued and newly started in line with organizational objectives as given in the respective Divisional activities. NSF was able to obtain Rs. 3,583,185 from IDRC to develop a regulatory frame work for Nanotechnology related activities in Sri Lanka.

Rs.000'

Year	Approved Budget	Revised Budget	Funds Received	% of approved budget	% of revised budget
2008	320,000	297,600	138,653	43.33	46.59
2009	217,192	184,613	68,350	31.47	37.00
2010	238,000	238,000	107,000	44.96	44.96
2011	300,000	300,000	110,710	36.90	36.90
2012	311,000	283,010	157,384	50.61	55.61
2013	250,000	250,000	135,115	54.05	54.05

Management Issues

The beneficiaries of research grants were basically those in academic and research institutes and NSF does not have direct control over them while research is carried out under the supervision of the respective Heads of Departments of those research institutions. In spite of NSF having a strong grant scheme conditions, timely implementation of projects is affected due to this and to some extent due to procedures and systems within the grantee's institution. We are improving our systems on an ongoing basis to address this.

Financial Statements

Statement of Comprehensive Income for the Year Ended 31st December 2013

	2013	2011	Rs.000
Revenue			
Government Grant	84,661	75,252	
Other Income			
Interest received	231	206	
Sundry Income	42	49	
Sale of Publications	(3,490)	(1,933)	
Photocopy receipts	3	12	
NSLRC Income	26	11	
Exchange Gain/(Loss)	108	-	
Differed Revenue	10,722	10,421	
	<u>92,303</u>	<u>84,019</u>	

Expenditure

	2013		2012	
Personal Emoluments				
Salaries & allowances	49,248		43,239	
Employees Provident Fund	6,175		5,177	
Employees Trust Fund	1,236		1,034	
Provision for retiring gratuity	2,401		6,393	
Overtime	790		728	
Holiday payment	51		43	
Uniforms	213		152	
Sraff training	282		188	
	<u>60,396</u>		<u>56,954</u>	
Travelling	196		412	
Supplies	3,423		2,473	
Maintenance	4,629		1,931	
Contractual Service	9,161		8,442	
Others	6,986		10,024	
Depreciation	12,765		12,030	
	<u>37,160</u>	97,556	<u>35,312</u>	92,266
Surplus/ Deficit over the income before extraordinary items		(5,253)		(8,247)
Extraordinary items (Net Profit or loss)		-		-
Net Surplus/ Deficit for the period		<u>(5,253)</u>		<u>(8,247)</u>

Statement of Financial Position as at 31st December 2013

	2013	2012	2011	Rs.'000
ASSETS				
Non Current Assets				
Property Plant and Equipment	451,253	445,069	442,743	
	451,253	445,069	442,743	442,743
Investments	632,000	632,000	661,522	661,522
Current Assets				
Inventories/ Stock	2,911	4,263	4,096	
Trade and other receivables	14,596	13,913	17,246	
Prepayments	811	661	1,024	
Cash and cash equivalents	8,802	12,481	13,351	
	27,120	31,318	35,717	
Total assets	1,110,373	1,108,387	1,139,982	
Net assets & Liabilities				
Capital and Reserves				
Accumulated Fund	(19,022)	(8,819)	6,256	
Reserves - Revaluation Reserve	422,549	422,549	422,549	
Government Grant	632,000	632,000	661,522	
	1,035,527	1,045,730	1,090,327	
Non current liabilities				
Provision for gratuity	20,526	23,085	19,178	
Differed revenue	28,571	27,539	21,074	
	49,097	50,624	40,252	
Current liabilities				
Payables	4,417	2,764	2,835	
Accured Expenses	21,332	9,269	6,568	
	25,749	12,033	9,403	
	1,110,373	1,108,387	1,139,982	

Statement of Cash Flow

	Rs'000	
	2013	2012
<u>Cash flows from operating Activities</u>		
Net excess of expenditure over income	(5,260)	(8,247)
Add; NSF fund prior year adjustments	(1,178)	(1,168)
	(6,438)	(7,079)
<u>Adjustments for</u>		
Depreciation	(12,765)	(12,030)
Loss from publications	(3,490)	(1,933)
Gratuity paid during the year	4,960	2,485
Provision for Gratuity	(2,401)	(6,392)
Books written off	-	(6)
Excess Gain/(Loss)	108	-
Fixed Assets written off	-	36
Deffered Revenue	10,722	10,421
Stock of Magazines & Journals written off	(182)	(412)
Operating profit/loss before working capital changes	(3,390)	824
Net increase/decrease in trade other receivables	(833)	3,696
Net increase/decrease in inventories	1,353	(167)
Net decrease/increase in trade payables	13,716	2,630
Cash generated from operations	14,236	6,159
Net cash from operating activities	10,846	6,983
<u>Cash flows from Investing Activities</u>		
Outflow from activities	(134,406)	(163,672)
Purchase of assets	(18,950)	(3,892)
Proceeds from sale of books	133	325
Net cash used in investing activities	(153,223)	(167,239)
<u>Cash Flows from Financial Activities</u>		
Contribution from Government	135,115	157,383
Foreign Aid	<u>3,583</u>	<u>2,003</u>
	138,698	159,386
Net cash from financing activities	3,679)	(870)
Cash & cash equivalent at beginning period	12,481	13,351
Cash & cash equivalent at end of period	8,802	12,481

Notes on Accounts

The Financial Statements have been prepared in accordance with Sri Lanka Public Sector Accounting Standards (SLPSAS) and presented in accordance to Sri Lanka public sector Accounting Standards SLPSAS 01 - Presentation of Financial Statements.

The treatment of depreciation related to assets have been treated as deferred income which is recognized as income on a systematic and rational basis over the useful life of the asset in accordance to LKAS 20

1.1 Documentation Unit Capital Fund Expenditure

	2013	2012
	Rs.	Rs.
1 NSLRC Equipment (Printing)	186,368.00	-
2 NSLRC Books	102,998.00	511,254.14
3 National Digitization Project	3,878,904.38	862,208.51
4 Advisory Board	-	796.00
5 NSLRC staff training	7,000.00	-
6 International Database	2,597,123.89	2,147,998.25
7 NSLRC workshops & Seminars	(34,963.02)	(29,088.83)
8 Union List Data Base	90,757.26	130,041.17
9 National Repository S & T Literature	-	54,191.67
10 Seminars Workshops & Other Support to Library	400,472.97	111,381.00
11 Prepare promotional Materials	13,166.98	3,946.34
	7,243,802.96	3,792,728.25

1.2 Grants for Research & Other Scientific Work

Our policy in funding research grants as formulated in the Research Grants contractual agreement is to transfer the funds in installments to the Institution where the grantee is employed. If there is an unused balance of funds with the relevant Institution, after completion of the project the balance has to be refunded to NSF. Hence we treat the funds transferred to the Institution as expenditure. At the end of the project if there remains unutilized funds, we create a debtor.

	2013	2012
Research Grants & Other Scientific work expenditure	60,773,064.90	110,186,376.33
Research Scholarships & Fellowships	8,708,629.22	7,378,086.12
Chronic Kidney Disease Project	-	-
Actual expenditure for the year	69,481,694.12	117,564,462.457
Accrued expenditure	1,037,413.45	71,226.29
	70,519,107.57	117,635,728.74

1.3 **Miscellaneous Fund Expenditure**

	2013	2012
	Rs.	Rs.
1 International contacts	8,271,744.77	7,532,570.48
2 Science Popularization Division	13,247,995.35	9,769,918.27
3 Information Technology Unit	5,673,574.19	972,365.54
4 Rehabilitation & Improvements for assets	161,501.76	883,071.84
5 Director's Office Vote	1,118,659.53	6,647,189.69
6 Science & Technology Policy Research Division	2,319,478.74	2,218,203.90
7 Technology Division	24,463,161.95	7,124,881.19
8 International Liaison Division	2,721,985.21	2,667,604.05
9 Global Forum Follow UP	3,360.00	110,912.76
10 IDRC NSF Expenditure	5,328.00	1,287,752.97
11 International Contacts OSTP	4,164,686.23	3,768,235.40
	62,151,475.73	42,982,706.09

2 **Assets & the basis of their valuation**
Depreciable assets & Depreciation

Depreciation has been provided on the original cost or at valuation on a straight line basis from the date of purchase of the assets and is calculated to write off the assets over their estimated useful lives.

Depreciation Rates as Follows

Building	5%
Office Equipment & Furniture	20%
Motor Vehicles	20%
Accessories & Miscellaneous	20%
Library Books	5%
Scientific & Laboratory Equipment out on loan	10%
Documentation Equipment	10%

3 <u>Debtors</u>	2013	2012
	Rs.	Rs.
Total debtors	10,454,771.54	10,438,427.26
Less: Provision for doubtful debts	-	-
	10,454,771.54	10,438,427.26

NSF provides doubtful debts for debts, which are outstanding for more than 3 years

4 **Liabilities**

Creditors

Creditors amounting to Rs. 4,417,096.98 represents monies held by NSF as given below,

	2013	2012
	Rs.	Rs.
1 SIDA/RFC A/c	11,618.17	11,190.47
2 SIDA	608.05	608.05
3 Sundry Creditors	752,846.66	752,846.66
4 Staff Creditors	5,189.32	109.32
5 Research Project on Energy	24,476.05	24,476.05
6 Unesco Participation Programme	2,185,785.70	-
7 Stephan Workshop	1,436,573.03	1,975,214.41
	4,417,096.98	2,764,444.96

5 (a) **Publications**

These are published mainly to disseminate Scientific Knowledge to school children in particular and to the society in general as well as to impart knowledge to the scientific community, policy makers, funding agencies etc.

Therefore in many occasions publications have to be given free of charge to schools & other relevant various organisations specially as prizes/ awards for science related activities. Eg. Competitions. Such releases are affected always with Director's approval.

The Journals and Magazines over six months were written down by 50% and the value of Journals and Magazines, which are over an year were written down to zero as per the decision of the Board of Management on 15th November 2010.

The value of books/any other publications other than Journals and magazines were written down to Zero value after five years of printing as per the decision of the Board of Management on 12th August 2011.

(b) <u>Sale of Publications</u>		2013
		Rs.
1	Other Publications	4,235.00
2	Sri Lanka Journal of Social Science	100.00
3	Mab Publication	155.00
4	Vidurawa	2,815.00
5	Food Security	400.00
6	Poster	(1,440.00)
7	Waders of Sri Lanka	120.00
8	Lankawe Swabhavika Vipath	(81,739.72)
9	Sustainable Agriculture	56,590.74
10	Medicinal Plants used in Sri Lanka	(7,701.00)
11	VCDs	(54,730.00)
12	Vidyathmaka Elawalu Vagawa	(48,146.90)
13	Sithiyam Vidyawa	(35,996.00)
14	Sri Lanka Medicinal Plants & Monographs	(71,600.00)
15	Atoms for Peace	(031,587.15)
16	Guide to Research & Scientific Institutions	(199,269.11)
17	Agantuka shaka vishesha	(58,008.80)
18	Alternative Energy	(55,553.61)
19	Ecosystems Based Indiginous Water Management	(39,502.00)
20	Ground Water Conditions in Sri Lanka	(169,500.00)
21	Infant & Young Child Nutrition	(25,603.80)
22	Rubber Diseases	420.00
23	Sri Lankawe Kaniya Sampath	(230.61)
24	Tradition & Livelyhood	(338,590.00)
25	Sri Lanka Science & Technology Innovation Statistical Indicator 2008	(105.00)
26	DVD's	(6,785.00)
27	JNSF Vol. 39	(9,600.00)
28	Ritipanna	(56,495.88)

29	Kadukaraya saha Nayayam	45,620.20
30	Sri Lanka Journal of Social Sciences - Vol.33-34	3,600.00
31	Vidurawa - Vol. 28 - 1 (E)	165.00
32	Vidurawa - Vol. 28 Special - (S)	(1,259.54)
33	Vidurawa - Vol. 28 Special - (T)	(7,150.00)
34	Vidurawa Vol. 28-2 (E)	100.00
35	Vidurawa Vol. 28-2 (S)	100.00
36	Vidurawa Vol. 29-1 (S)	(7,050.00)
37	Vidurawa Vol. 29-1 (E)	(1,700.00)
38	Vidurawa Vol. 29-1 (T)	(14,375.00)
39	Zoonotic Diseases in Sri Lanka	(26,891.16)
40	Statistical Hand Book 2004	(57,460.00)
41	Statistical Hand Book 2006	(13,402.00)
42	JNSF Vol. 40	(63,622.80)
43	JNSF Vol. 41	(647,828.89)
44	Vidurawa - Vol. 28 Special - (E)	(536.22)
45	Vidurawa Vol. 29-2 (S)	(39,435.00)
46	Vidurawa Vol. 29-2 (E)	(47,700.00)
47	Vidurawa Vol. 29-2 (T)	(140,417.16)
48	Vidurawa Vol. 29 Special (S)	(221,024.50)
49	Vidurawa Vol. 29 Special (E)	(181,287.73)
50	Vidurawa Vol. 29 Special (T)	(179,970.52)
51	Vidurawa Vol. 30-1 (S)	(171,837.50)
52	Vidurawa Vol. 30-1 (E)	(136,861.79)
53	Vidurawa Vol. 30-1 (T)	(75,412.17)
54	Vidurawa Vol. 30-2 (E)	(22,294.34)
55	Vidurawa Vol. 30-2 (S)	(40,574.05)
56	MAB Checkliast & Hand Book - 24	(2,253.44)
		(3,489,729.33)

5.1 <u>National Committee Expenditure</u>		2013	
		Rs.	
1	National Committee on the MAB Programme		135,410.57
2	National Committee on Sustainable Use of Mineral Resources		16,542.60
3	National Committee on Innovation & Techno-Entrepreneurship		4,000.00
4	National Committee on Robotics, Advanced Design & Manufacturing		4,000.00
5	National Committee on Advance Material		-
6	National Committee on Electronic & ICT		3,000.00
7	National Committee on ICSU		4,000.00
8	National Committee on International Partnerships		15,559.54
9	National Committee on Basic Sciences		7,000.00
10	National Committee on Ethics & S & T		15,000.00
11	National Committee on Nanotechnology		13,000.00
12	National Committee on Research & Development		6,000.00
13	National Committee on Library & Information Services		13,000.00
14	National Committee on Science & Technology Mathematics Education		28,361.10
15	National Committee on Social Sciences		39,200.00
16	National Committee on Agriculture & Food Science Research		4,000.00
17	National Committee on Ocean & Marine Sciences		11,000.00
18	National Committee on Science Popularization		24,000.00
19	Editorial Board of JNSF		118,194.00
20	National Committee on Biotechnology		32,000.00
21	National Committee on Engineering & Manufacturing		5,000.00
			497,267.81
5.2 <u>National Science Library & Resource Centre</u>		2013	2012
		Rs.	Rs.
1	Maintenance & Repairs	39,836.71	-
2	Periodicals Local & Foreign	749,460.66	814,334.98
3	Consumables	52,654.00	126,587.00
4	Miscellaneous	-	19,355.22
5	Document delivery services	1,989.00	-
		843,940.37	960,277.20

5.3 Printing Unit	2013	2012
	Rs.	Rs.
1 Consumables & Chemicals	601,335.05	515,272.47
2 Paper & Boards	6,001.09	(75,653.80)
3 Maintenance & Repairs	189,928.52	185,106.83
	729,264.66	624,725.50

6 **INVESTMENT** - Investment of Rs. 632,000,000 represents the NSF investment in NANCO (Pvt) Ltd.

7 **Employees Benefit**

All employees are covered by EPF & ETF. An approved Medical Scheme is provided in addition to the normal Welfare facilities available.

8 **Retiring Gratuity**

Provisions have been made in the accounts in respect of liability for retiring gratuity for the employees who has completed one year of Service.

	Rs.
Amount paid for the year	4,959,777.50
Provision for the year	2,400,953.50

9 The publication stock out on consignment basis is Rs. 47,500/-

10 NSF owns 07 vehicles.

11 **Funds Drawn from the Treasury during - 2013**

	Rs.
Consolidated Funds	135,115,443.00
Recurrent Funds	84,661,000.00
Foreign Aid- IDRC	3,583,185.62
Treasury Deposit	66,760.00 (IDRC)

Funds drawn from the Treasury from 1968 to 2013

	Rs.
Consolidated funds	1,518,992,072.45
Foreign Aids	342,558,495.22

12 Prior period adjustments : Following adjustments have been made to the fund accounts.

1	2013	2012
<u>Documentation Unit Capital Fund</u>	Rs.	Rs.
Balance as at 01.01.2013	2,962,279.88	3,824,628.84
Add: Prior year adjustments	1,500.00	169,620.71
	2,963,779.88	3,655,008.13
2		
<u>Research Grant Fund</u>		
Balance as at 01.01.2013	2,983,302.73	8,196,107.32
Add: Prior year adjustments	5,530,394.75	3,922,924.15
	8,513,697.48	12,119,031.47
3		
<u>Man & the Biosphere Fund</u>		
Balance as at 01.01.2013	1,829,977.19	1,829,977.19
Less; Net prior year adjustments	-	-
	1,829,977.19	1,829,977.19
4		
<u>Miscellaneous Fund</u>		
Balance as at 01.01.2013	1,120,436.24	2,667,266.22
Less; Net prior year adjustments	1,338,824.56	1,106,070.43
	(218,388.32)	(1,561,195.79)
5		
<u>Scientific Reserve Fund</u>		
Balance as at 01.01.2013	6,747,380.02	6,747,380.02
Less; Net prior year adjustments	-	-
	6,747,380.02	6,747,380.02
6		
<u>Foreign Aid</u>		
Balance as at 01.01.2013	8,034,907.10	10,532,924.10
Less; Net prior year adjustments	-	1,498,017.00
	8,034,907.10	9,034,907.10
7		
<u>NSF Fund</u>		
Balance as at 01.01.2013	(32,497,950.37)	(25,419,249.06)
Less; Net prior year adjustments	(1,177,634.08)	1,168,407.22
	(33,675,584.45)	(24,250,841.84)