

# Annual Report 2014



National Science Foundation  
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NATIONAL  
SCIENCE  
FOUNDATION



## Chairman's message

It gives me great pleasure to present the Annual Report of the National Science Foundation (NSF) for 2014. As a premier Science and Technology organization in the country, the NSF has a vital role to play in driving Science, Technology and Innovation (STI) towards socioeconomic development of the country. 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 knowledge based economy. According to the mandate we focus on knowledge creation, facilitating capacity building, technology transfer, dissemination and awareness creation in all fields of science and technology to improve the quality of life of the people. To achieve this, the NSF worked with expertise and renowned scientists. I take great pleasure in thanking those who provide their services in the year 2014 and look forward to further fruitful endeavor in the future.

The great presence of the Foundation in the science and technology sector of this country is highlighted by the number of Scientists and technologist registered in the Science and Technology Management Information System database; The STMIS database is being updated regularly and by the end of 2014, the total number of scientists registered in the database was 5,324.

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 utilized in vital decisions for the development of policies and strategies for the promotion of science, technology, research and industry in the country.

It is a pleasure 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 2014. 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.

National Thematic Research programme (NTRP) was continued to address national research priorities, 'Food Security', 'Water Security', 'Climate Change & Natural Disasters' and 'Energy Security', etc. 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.

Since development must take in all three dimensions as economic, environment and social equally, foundation took steps to enhance research in social 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 in 2013 and continued 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. I am hopeful that this exercise will produce valuable knowledge and useful results.

The NSF continued its role as the key institution responsible for uplifting and popularization of science in the general public and school children. In order to lay a strong foundation in science amongst school children the foundation continues to work in collaboration with the Ministry of Education. The World Science day 2014 schools program held in November carried an important theme "Space Technology for the benefit of Human Beings" attracting more than 1500 school children and teachers. The University Science

Society (USS) program is another important activity 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 and twenty nine (29) were registered with the NSF at the end of 2014.

Seminars, conferences and workshops organized by the NSF attracted a large number of personnel regionally as well as internationally. Local workshops immensely help to aware people on current challenges emerged in various sectors. 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 into 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 Research and Development (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. National Digitization Project was continued, of which the final goal is to provide quick and convenient online access to local scholarly literature.

A Memorandum of Understanding (MoU) was prepared to be signed between the Pakistan Science Foundation and the NSF. 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. Ministry of Technology and Research will be signing this MoU with the Ministry of Science and Technology of Pakistan. The NSF in concord with The 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.

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 members of all Committees 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 31.12.2014.

### Financial overview

Due to the uncertainty in receiving funds from the government in a timely manner the management had to adopt stringent economy measures and exercise a cautious policy towards its commitments. The value of over all commitment for research and major scientific activities, for the year was approximately Rs.200 million. This was only 84% of the actual requirement and 16% of the allocation for the year. 11% of funds remained unreleased by the treasury which resulted in with holding several Technology and Research grants approved for awarding.

### Achieving the Objectives

Despite many constraints and challenges experienced, the NSF maintained a balanced portfolio in accomplishing its objectives through the adoption of appropriate strategies. A significant contribution was made to promote research & development (R&D) and capacity building of researchers and research institutes in the country. Technology development and transfer of research out comes to commercial products was also facilitated to some extent to pave the way towards industrial development. Contribution made towards building up a scientifically literate society was also significant. A noteworthy role was played in catering to the STI information needs of the academic and research community, policy makers and the administrators.

### Facilitate Research

The main aim of facilitating research is to support Research, Development and Innovation which addresses national development needs and to enhance quality of RD&I undertaken by the National Research Innovation System (NRIS). In view of this, during 2014, significant achievements have been made.

- **Competitive Research Grant Scheme:** This scheme is intended to provide assistance to supplement the financial, physical and manpower resource availability for scientific research in the country. Under this scheme, 29 new research grants worth Rs. 76.1 million were awarded. The number of ongoing research projects funded during 2014 was 119 while eleven (11) grants awarded during the previous years were completed. The total financial commitment for the year for competitive research grants was Rs.84.85. During the year, 20 new Research Students were appointed to facilitate manpower requirements in NSF funded projects. Eight (08) and three (03) research papers arising from NSF funded projects have been published in foreign and local journals respectively. The number of other research communications made was eighty seven (87).
- **National Thematic Research Program (NTRP):** National Thematic Research Programme (NTRP) is a mission oriented multidisciplinary, collaborative research programme addressing national priorities. All three programmes so far identified under the Thematic research programme viz, Food Security, Climate Change & Natural Disasters and Water Security have shown satisfactory progress in spite of the financial and staff constraints experienced during the year. Preparation of the theme Paper on Climate Change & Natural Disasters has been completed and eleven (11) projects have been identified in six strategic thrust areas to be implemented through partnerships with both public and private sector institutions while nine (9) projects awarded under the Food Security theme during

2012 and 2013 continued to show satisfactory progress. A noteworthy achievement under the Water Security theme, was the successful completion of the UNESCO Programme on Integrated Water Resource Management (IWRM). It covered 10 workshops conducted in 06 Districts. The objective of the programme was to create awareness among farmer communities on integrated water resource management and water conservation.

### **Capacity building of the Research community and International Collaboration**

A critical mass of well skilled competent quality researchers is a must for the development of the country. To address this national need NSF offers a range of schemes towards capacity building of the research community. The contribution during the year was significant.

- **Travel grants** : During the year, 51 Travel grants were awarded to Sri Lankan scientists. The aim being to provide the researchers opportunity to present their research findings at International forums and to acquire Scientific Knowledge on new discoveries, achievements, developments etc.
- **Overseas Special Training Program (OSTP)**: Under this scheme 16 researchers were facilitated with financial assistance to enhance their knowledge and research capacities in advance laboratories and research centers of excellence abroad. The commitment of the NSF was Rs. 3.78 million.
- **Research Studentships** : During the year, 24 Research Students working on NSF funded projects were supported to register for postgraduate degrees while 15 students completed their postgraduate degrees of which five (05) were PhD degrees.
- **International partnership for Science & Technology (IPSAT)** : In order to obtain services of high caliber scientists and technologists working abroad, three (3) grants were awarded under IPSAT scheme.
- **Sponsorships for Local and International Conferences**: The NSF also sponsored research associations and institutes during the year to organize 24 national and international conferences. The objective was to promote sharing of research outcomes and experiences. The amount of funds incurred was 4.94 million.

### **Facilitate Infrastructure development in academic and research institutes**

Laboratories with modern infrastructure facilities are needed for research to be in par with the global S&T research. Eight (8) Equipment grants worth LKR 7.29 Million were awarded to universities and research institutes to improve the research infrastructure in the country.

### **Technology and Entrepreneurial development :**

The expected main outcome of the programme is the promotion of innovation and new technology to pave the way towards industrial development and thereby contribute to improve the national economy. A total of six (6) grants were awarded during the year to Support 'Technology development' and to Support 'Start-up business'. The total financial commitment towards this for the year was Rs. 23.55 million. Six (6) technology projects were successfully completed during the year with tangible outputs and the products are ready for commercialisation. Sound knowledge on Intellectual Property (IP) and related issues is a major requirement for a successful entrepreneur. Technology Transfer Facilitating Cell, "One Stop Tech Spot" was thus launched on 04th November, 2014 creating a workable platform for investors and inventors for commercialization of grant outputs. Nine inventors and three Science and Technology Officers were provided consultancy for patent filing during the year. Unavailability of national policies to ensure a good and sustainable market for such local products is a main barrier identified.

**Awards for outstanding research:** NSF offers several award schemes to reward, motivate and encourage researchers with significant contributions for the advancement of research and technology. A substantial number of researchers were felicitated during the year under a number of schemes.

- **NSF Research Awards’ and ‘NSF Technology Awards’ :** A total of four (4) awards and three (3) Certificates of Commendation were awarded to researchers and technologists having made significant contributions through NSF funded projects. The Awards Ceremony took place on 23 December.
- **‘World Academy of Science (TWAS) Award’** scheme confers talented young scientists who attain high levels of excellence in their research work and under this scheme, one nomination in the field of biology was forwarded to the TWAS secretariat for consideration for the TWAS 2014 Award.
- The **‘National Science and Technology ‘ (NASTA)** is another scheme implemented by the NSF to recognize significant contributions at the National level. Under nine categories, ten projects were selected for the award of five (5) national awards and five (5) certificates of merit. Arrangements are underway for the Awards ceremony to be held under the patronage of His Excellency the President.
- **‘Support Scheme for Supervision of Research Degrees’ (SUSRED)** is intended 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. Six SUSRED awards were conferred during the year.

### **International Partnerships**

NSF continued to maintain effective partnerships serving as the National focal point of several international scientific organizations such as TWAS, ICSU, ICGB, SIDA, IFS etc. An initiative was taken to build up a new partnership between the Pakistan Science Foundation and the NSF. This will provide an opportunity for local scientists/ technologists to obtain expertise support and establish collaborative activities in various fields of Science and Technology with research institutions in Pakistan.

### **Communicating Science**

Main aim of this programme is to popularize Science, Technology and Innovation towards building up a scientific literate society. The World Science Day, Schools Programme is an annual event organized to promote science culture within the school community. The programme for 2014 was organized under the theme ‘Space Technology for the Benefit of human Beings’ and a series of competitions were conducted among the School Science Societies registered with the NSF. Dr. Sarath Gunapala of NASA, USA - the eminent Sri Lankan scientist attended the programme as Guest of honour.

A new programme ‘Young Leaders of Science’ was introduced in which 25 post A/L students were trained as Science leaders. A series of books, magazines and video programs (Mihimandala’ phase II) on a range of topics of national importance were published for dissemination and promotion of scientific knowledge within different sectors of the society. The NSF further actively participated in the Science week (4-10 November) organized by the Ministry of Technology and Research. Under the Vidukavaya lecture series, public lectures were organized in collaboration with the Institute of Fundamental Science (IFS) to create a platform for scholars and the general public for the discourse of issues of national importance.

Initial steps were taken for the establishment of a Science Centre to fill the long standing gap on the road map towards a scientifically literate society.

## **Sustainable utilization of Natural resources**

A nomination Dossier on Ussangoda was submitted to the UNESCO for consideration to be nominated as a Geopark. Work on Periodic Reviews of the four International Biosphere Reserves (IBRs) in Sri Lanka, namely, Sinharaja, Bundala, Hurulu and Nakiyadeniya (KDN) Complex was completed and reports were submitted to UNESCO.

## **Science and Technology Policy Research**

Information for the formulation of national policies and Scientific indicators is vital for the social - economic development of a country. As mandated the 'Science and Technology Policy Research Division' continued to carry out policy research on specific areas of national importance for the collection, interpretation and analysis of data to be provided to policy makers, administrators, researchers and stakeholders. During the year National R&D survey and a Tracer Study on ST&I postgraduates were carried out and both studies showed significant progress.

## **Fulfilling the Information Needs**

The Science and Technology Management Information System (STMIS) database provided a good source of information to cater to information needs of policy makers, administrators and other stakeholders. The total number of scientists registered in STIMS database recorded 5,320 by the end of 2014.

National Science Library & Resource Centre (NSLRC) is the National Focal Point for the dissemination of Science & Technology (S&T) literature for the scientific counterparts. It maintains a Digital Library of full text documents of scholarly literature of Sri Lankan origin expanding into a national network of Digital Libraries (Institutional Repositories IRs) spread across research and academic institutions. The network showed high progress during the year with seven (07) new IRs joining the network. A new electronic repository was established to provide access to the full text of all research outputs of NSF funded research. The number of journal titles published on Sri Lankan Journals Online (SLJOL), the platform for online publication of scholarly peer reviewed journals of Sri Lanka, recorded 59. During 2014, six (06) new titles joined SLJOL.

Two (02) Open Access Policy Templates to promote open Access publishing of research results were formulated in collaboration with NASTEC (National Science & Technology Commission) to be used across Funding organizations and Research institutes/universities. It is anticipated that this strategy will promote wider dissemination, more recognition and more impact to the findings of Sri Lankan research carried out with public funds.

## **Journal of National Science Foundation (JNSF)**

JNSF is the only one journal currently indexed in the Thomson Reuters databases. All four issues of the journal were published on time.

## **Improved governance, management, procedure - IT applications**

The online system geared towards integrating all key activities of the NSF for the purpose of improving performance efficiency showed very little progress. The targets set for the year could not be met due to reasons beyond the control of the NSF. Internet bandwidth and upgrading local area network devices were the key activities performed by the IT unit. However, the performance of the network remained poor throughout the year. Two databases of the NSLRC crashed during the year and the support provided to reinstate the same by the IT unit was inadequate. The need for upgrading the IT facilities to be in par with modern systems and strengthening with competent staff is important.

## **Competent scientific administrative, technical and support staff**

Human Resources play a critical role in the success of an organization. The staff training showed significant progress compared to previous years. Staff was given the opportunity to improve technical and managerial competencies to attain a high level of professionalism through the participation in local and foreign meetings/ workshops /seminars to enable good performance in specific tasks assigned. The staff represented NSF at 38 local & 11 foreign meetings/ workshops/ seminars. Opportunity was provided for all staff to participate in an Out Bound Programme at the Special Force Training School, Sri Lanka Army, Maduru Oya mainly to build up leadership and team spirit.

## **Quality management System**

NSF is very much concerned in providing a consistent quality service to its stakeholders across all functional areas of the institution and hence work was underway towards the goal of obtaining ISO 9001: 2008 Quality Management System certification. Documentation work including the revision of Standard Operational Procedures were completed and an electronic gateway was established to access the Master list of documents. However the progress during the year showed very little progress due to the unavailability of adequate staff to be made responsible at the QMS and due to priorities given to other important functions.

## **Balanced Score Card**

This is to identify, develop and establish standards and annual targets for each division and NSF as a whole to achieve goals there by provide a quality service for NSF stakeholders meeting their expectations. It is also a tool to measure individual and organizational performance. Key Performance Indicators were defined and progress was measured at individual and organizational levels focusing on Customer, Internal processes, Employees and Financial aspects.

## **Constraints and challenges**

Performance of the services of an organization is determined to a large extent on the staff strength and the availability of sufficient funds. The high staff turn over experienced during the year was a major challenge faced by the NSF. The non receipt of total amount of funds allocated for the year and the continuous delays experienced in the release of funds by the treasury were the other major constraints that adversely effected in achieving goals for the year. Inability to disburse funds on time for projects has badly effected achieving planned targets and this has severely affected the image of the NSF among the research community. Inadequate IT facilitation and Unavailability of state of the art back up systems for computer servers of adequate IT support further hindered achieving goals as planned.

**Sunethra Perera**

**Acting Director General**

**B.Sc. (Bio. Sci.) (University of Colombo), M.Sc. (Aberdeen )**



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## ***OVERVIEW***

(The National Science Foundation functions under the purview of the Ministry of Technology and Research).

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 (S&T) in Sri Lanka.

## ***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 and 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 economy and well informed society efficiently and effectively, and
- Contribute to improve the quality of life and standard of living of our people,

by 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:

- a) To initiate, facilitate and support basic and applied scientific research by universities, science and technology institutions and scientists, with a view to:
  - Strengthening scientific research potential, including research in the social science, and science education programmes
  - Developing the natural resources of Sri Lanka
  - Promoting the welfare of the people of Sri Lanka

- Training research personnel in science and technology
- b) To foster the interchange of scientific information among scientists in Sri Lanka and abroad.
- c) To award scholarships and fellowships for scientific study or scientific work at recognized science and technology institutions.
- d) To maintain a current register of scientific and technical personnel, and in other ways to 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.
- e) To popularize science amongst the people by funding and executing programmes for the purpose.

## **KEY PHILOSOPHY**

The NSF abides by two principles

### ***Universality of Science***

The NSF observes and upholds the freedom of scientists as individuals, to communicate and associate with other scientists globally, in the furtherance of their science without discrimination on 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, and physical disability, political stance, and religion. NSF shall not accept disruption of its own activities by statements or actions that intentionally or otherwise prevent the application of this principle.

### ***Freedom in the Pursuit of Science***

The NSF observes and upholds the rights of scientists to freely pursue science, provided it is in accordance with accepted scientific process and is undertaken responsibly. The NSF recognizes that individual scientists have a responsibility to conduct their work with honesty, integrity, openness and respect, and a collective responsibility to maximize the benefits of science and to dispel the misuse of science for society as a whole.

## **STRATEGIC GOALS**

According to the Mandate, five goals have been 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 premier S&T organization in the country and discharge its duties and functions as assigned by the Science and Technology Development Act No. 11 of 1994 of the Democratic Socialist Republic of Sri Lanka.

***Goal 1: To be the premier organization to promote Research Development and Innovation, Science and Technology 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 Science, Technology & Innovation information.***

***Goal 4: To be the leader in popularization of STI amongst the 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.***

The NSF is governed by a Board of Management, which consists of the Chairman; the Director General; 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 Honorable Minister of Technology and Research (MoTR).

## BOARD OF MANAGEMENT OF NSF

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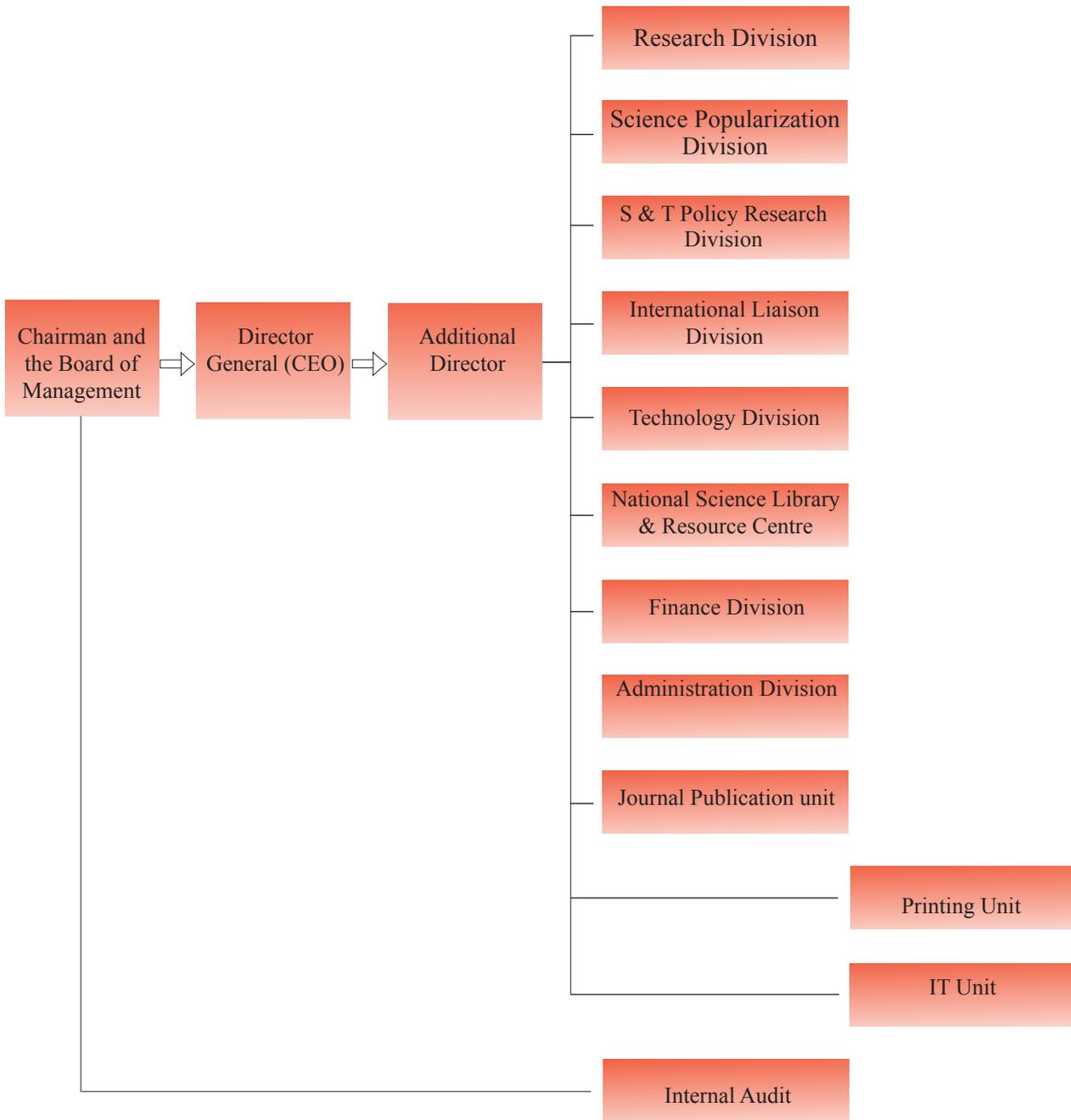
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## Organization structure



## **NSF Working Committees**

The NSF has established the expert 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 Working Committees:**

NSF Working Committee on Basic Sciences  
NSF Working Committee on Biotechnology & Bioethics  
NSF Working Committee on Agriculture & Food Sciences  
NSF Working Committee on Oceanography & Marine Resources  
NSF Working Committee on Health Sciences  
NSF Working Committee on Environment & Biodiversity  
NSF Working Committee on Engineering, Architecture and ICT  
NSF Working Committee on UNESCO Participation Programme  
Steering Committee on Climate Change & Natural Disasters  
NSF Working Committee on Science, Mathematics and Engineering Education  
NSF Working Committee on Science Popularization  
NSF Working Committee on Library & Information Sciences  
NSF Working Committee on Social Sciences  
NSF Working Committee on S & T Policy Studies  
NSF Working Committee on Indigenous Knowledge  
NSF National Committee on the Man and the Biosphere Programme  
NSF Working Committee on International Liaison

### **Research Advisory Board**

### **Special Committees:**

**Editorial Board – Journal of National Science Foundation of Sri Lanka**

**Editorial Board – Sri Lanka Journal of Social Sciences**

**Editorial Board – The Natural Resources of Sri Lanka – Conditions, Trends and Prospects**



# HIGHLIGHTS 2014

- Under the Competitive Research Grants Scheme, twenty nine (29) new research grants worth Rs. 76.1 million were awarded. The number of ongoing research projects funded during 2014 was 119 while eleven (11) grants awarded during the previous years were completed.
- Six (6) technology projects were successfully completed during the year with tangible outputs and the products are ready for commercialization. A total of six (6) new grants were awarded during the year to Support 'Technology development'.
- During the year, fifteen (15) Research Students working on NSF funded projects completed their postgraduate degrees of which five (05) were PhD degrees. Another twenty four (24) students working on NSF Grants were supported to register for postgraduate degrees .
- A new online Repository was established providing access to the full text of all research out puts of NSF funded research since the inception of the Research Grants scheme. The repository is in progress and as at present covers 1066 research reports, 304 Post Graduate theses and 294 journal articles.
- Eight (8) Equipment grants worth Rs. 7.29 million were awarded to universities and research institutes to improve the research infrastructure in the country.
- Fifty one (51) overseas travel grants were awarded to scientists and technologists to present their research findings at international fora and to acquire knowledge on latest developments.
- Under the Overseas Special Training Programme (OSTP) sixteen (16) grants were awarded to Sri Lankan scientists providing opportunities to be trained at Centers of Excellence abroad in areas where such training facilities are not available in the country. These included support for Five (05) PhD and one (01) MPhil students.
- 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.
- A M.Sc. Programme on Stem Cell Biology was initiated at the University of Colombo to be conducted in collaboration with Manipal Institute of Regenerative Medicine as an outcome of the Global Forum conference conducted by the NSF in 2011. The first batch of students are due to complete the programme in 2015.
- As an outcome of the Global Forum conference conducted in 2011, the 'Credence Genomics' company was set up to carry out research and testing related to high throughput genetics. The company further offers a 'Bioinformatics service' to analyse the sequence of plant and animal genomes. This is the first company set up in Sri Lanka to offer a service of this nature.
- A project on Research and Development work of Coloured Glazes to solve production problems of stoneware and glazes was successfully completed providing concrete solutions to two problems; i.e. Lemon peel effect when using Dark red glaze and Crystal formation when using Cobalt blue glaze.
- Initial steps were taken to establish a Joint Research and Development venture on solar energy. Three scientists from the Universities of Ruhuna, Jaffna and Peradeniya were trained on the Development of CdTe/CdS based solar cells at the Sivananthan Laboratory, USA followed by two Workshops conducted at the the National Institute of Fundamental Studies and the University of Ruhuna.
- The Journal of the National Science Foundation of Sri Lanka (JNSF), which is the only Sri Lankan Journal cited by the Thomson Reuters in its Science Citation Index Expanded published its four ( 4) issues regularly and on time. On-line publishing of the journals has given very high visibility to its contents both locally and internationally.
- The computerized Science, Technology Management Information System (STMIS) which provides information on local scientists and technologists and other relevant information in the science and

technology sector was regularly updated and the database recorded information on 5324 personnel by December.

- The World Science Day (WSD) Schools Programme, which is the largest annual event organized by the NSF was held on 10 November, under the theme ‘Space Technology for the Benefit of Human Beings’ with the participation of more than 1500 school children and stakeholders. The main objective of WSD is to promote science culture within the school community leading to the development of a scientifically literate society. Dr. Sarath Gunapala of NASA, USA - the eminent Sri Lankan scientist attended the programme as the Keynote Speaker.
- A new programme ‘Young Leaders of Science’ was introduced for the first time for students who excelled at the AL examination in Mathematics and Biological Science streams. The objective was to sharpen the creativity, critical thinking, inborn talents and soft skills of the students and to provide them a broader knowledge on core areas of Science. The first batch consisted of 23 students and the programme comprised workshops, lectures, practical sessions, field visits conducted over a four month period.
- A Public Lecture series was newly introduced in 2014, the objective being to create a platform for the scientific community and general public for the discourse on the currently important issues in the country and to make the general public aware on new research findings. The programme also provided a platform for exchanging ideas and views for future endeavors towards decision making process. Three (03) lectures were conducted under this programme.
- Under Phase II of the “Mihimandala” television series, five (05) Video programmes on topics of current interest – Health & Life style; Robotics and its future; Resilience to climate change; Biomimicry for development of Science and Oral Health were developed in Sinhala, Tamil and English. It is intended to use these videos for mass communication of information to reach a wide community.
- UNESCO Programme on Integrated Water Resource Management (IWRM) which comprised of 10 workshops covering 06 Districts was successfully completed. The objective was to create awareness among farmer communities on integrated water resource management and water conservation. The programme made a significant contribution pertaining to Water Security theme of the Thematic Research Programme.
- Phase two (II) of the National Digitization Project, covering scholarly literature of local origin in eleven (11) institutions in the country was commenced and 75% of the projected work was completed. The online network of Institutional Repositories (IR) among academic and research institutes was further expanded with the addition of 6 new IRs.
- Four new journals joined the Sri Lanka Journals Online (SLJOL) platform during the year and the total number of journals published on SLJOL recorded 59. Visibility to the contents of the journals have dramatically increased resulting with high usage statistics from 210 countries worldwide.
- Two (02) Open Access Policy Templates to promote open Access publishing of research results were formulated in collaboration with NASTEC (National Science & Technology Commission) to be used across Funding organizations and Research institutes/universities. It is anticipated that this strategy will promote wider dissemination, more recognition and more impact to the findings of Sri Lankan research carried out with public funds.
- Initial steps were taken to establish a National Science Centre for the country. Twelve themes were identified on which galleries are to be developed and members were appointed for the identification, designing of exhibits under each theme.



## RESEARCH, DEVELOPMENT & INNOVATION (RD&I)



## NSF Competitive Research Grants Scheme

The NSF undertakes activities with a view to promote research and development (R&D) in the country and to initiate, facilitate and support basic and applied scientific research by universities, and science and technology (S&T) institutions in Sri Lanka including multidisciplinary collaborative research that address themes of national importance. Also to award scholarships and fellowships to outstanding Sri Lankan postgraduate and postdoctoral researchers for scientific work at S & T institutions.

### NSF Competitive Research Grants Scheme

The Competitive Research Grants Scheme of NSF handled by the Research Division (RD) intends to provide assistance to supplement the financial, physical and manpower resources available in S & T Institutions in Sri Lanka for scientific research. It facilitates harnessing 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 Competitive Research Grants are awarded in all fields of Science & Technology.

#### Highlights of Completed Grants

**Project Title** : Risk factors and risk assessment of breast cancer among women in the district of Colombo, **(RG/2011/HS/15)**

**Investigator/s** : Dr N K Carukshi K Arambepola, Dr P B V R Kumari  
Department of Community Medicine, Faculty of Medicine University of Colombo

The study was carried out with the objectives of identifying the potential risk factors associated with breast cancer in the district of Colombo. The study developed a validated risk prediction model, which is suitable as a screening instrument to be applied in the field for identifying women at-risk for developing breast cancer to be prioritized and referred to routine screening with mammography. Since Sri Lanka is still unable to provide mammography screening facilities due to its high cost, the low - cost risk prediction model can be made available for women over 40 years of age in well-women clinics and in hospital settings.

**Project Title** : Taxonomy and phylogenetic relationships of some selected endemic genera *Amomum* Roxb., and *Alpinia* Roxb., of the family Zingiberaceae, (RG/2007/BT/02)

**Investigator/s** : Prof. D. M. D. Yakandawala, Department of Botany, Dr Preminda Samarajeewa, Department of Molecular Biology, Faculty of Science, University of Peradeniya

As systematic cataloguing of species diversity and revealing their taxonomy and evolutionary relationships play a pioneering and important role in modern biodiversity conservation efforts, this research has addressed several taxonomic, ecological and conservational issues of two of the least studied genera (*Alpinia* and *Amomum*) of an important plant family (Zingiberaceae) in tropical forests.

The phylogeny of the Sri Lankan *Alpinia* and *Amomum* will contribute to the phylogeny of the genus and the angiosperms as a whole. Several new locations for *Alpinia* and *Amomum* species were made and the voucher specimens were deposited at the National Herbarium, Royal Botanic Gardens, Peradeniya. A new species of *Amomum* has been identified.

A modified key for the two taxa, *Alpinia* and *Amomum* was constructed, which would aid in field identification of the members.

**Project Title** : Isolation and typing of nitrogen fixing bacteria associated with Rice. (RG/2008/BT/01)

**Investigator** : Dr. A. A. L. Ratnatileke, Department of Chemistry, Faculty of Science University of Kelaniya

Rice is the most extensively cultivated plant occupying 34% of the total cultivated lands in Sri Lanka. Heavy dependence of rice on N fertilizer, its rising cost and bad impact on environment has created renewed interest in recent research to search for natural nitrogen fertilizer alternatives such as bio-fertilizers, based on biological nitrogen fixation.

This is the first study conducted in Sri Lanka, on isolation and molecular characterization of Nitrogen fixing bacteria associated with rice. Therefore this study has brought new scientific knowledge on their occurrence, methods of isolation, methods of measuring nitrogen fixation, methods of characterizing bacteria at molecular level etc. New methods have been developed and previously published methods have been optimized specifically for analysis of local bacterial flora. The methods, techniques used in this study, therefore, would be highly useful for related research in the future.

The output of this research would be of value to design re-inoculation experiments to observe their efficacy in colonization and fixation of nitrogen in rice.

**Project Title** : Population genetic structure analysis of *Penaeus monodon* in Sri Lanka. (RG/2010/BT/02)

**Investigator/s** : Dr. (Mrs) D. H. N. Munasinghe, Dept. of Zoology, University of Ruhuna

The study was carried out with the objectives of understanding genetic variability among natural/wild populations of *Penaeus monodon* in Sri Lanka and estimating phylogenetic status of Sri Lankan

haplotypes among other geographically distributed genetic forms. The study revealed that there is a high genetic variation available in Eastern and Western populations while Southern populations show low genetic variation. Further, the study also showed that Sri Lankan populations are genetically more closely related with the Western Pacific Ocean populations than Western Indian Ocean populations.

The information revealed from this study would be useful when selecting brood stocks for *P. Monodon* culturing programmes and implementation of management strategies for conservation of wild populations in Sri Lanka.

**Project Title** : Control of tomato bacterial wilt caused by *Ralstonia solanacearum* (*Pseudomonas solanacearum*) using bacteriophages., (RG/2007/BT/05)

**Investigator/s** : Dr. Devika M. De Costa, Faculty of Agriculture, University of Peradeniya

The soil-borne plant pathogen, *Ralstonia solanacearum* (E. F. Smith) causes bacterial wilt in a range of economically-important crop species, including solanaceous crops namely, tomato, potato, pepper and brinjal. Bacterial wilt limits crop production in the wet-tropical and sub-tropical regions and in some warm-temperate regions. Effective control of bacterial wilt has been a challenge due to genetic variations of the pathogen, ability to overcome plant genetic resistance by the pathogen, lack of effective bactericides as a result of strains developing tolerance, and the pathogen's ability to reach high populations in a relatively short period of time when conditions are favorable for disease development. Management systems for bacterial wilt need to be established to permit stable crop production around the world.

There is a growing interest in using bacteriophages (phages) as bio-control agents (BCAs) to control plant pathogenic bacteria. Bacteriophages are viruses that specifically infect bacteria, but have no direct negative effects on animals or plants.

This is the first study in Sri Lanka that investigated the potential use of bacteriophage for the control of bacterial diseases, specially a disease causing severe losses for vegetable farmers and horticultural crop producers.

Major findings of this research are, (a) isolation of soil dwelling indigenous bacteriophages which are effective in controlling local strains of *R. solanacearum* causing wilt of tomato; Isolation and identification of a non-virulent *R. Solanacearum* as a host bacterium for mass culturing of all effective bacteriophages; Identification of a method effective for long term storage of bacteriophages and (c) Identification of an effective method to apply bacteriophages to reduce rate of wilt development under field conditions.

**Project Title** : Development of an Electrochemical Technology to Remove Nitrate from Contaminated Groundwater, (RG/2011/BS/01)

**Investigator/s** : Dr. K.G. Nadeeshani Nanayakkara, Dr. Meththika Vithanage,  
Mr. J.P. Padmasiri  
Institute of Fundamental Studies, Kandy

Good quality groundwater is vital in protecting living beings from health hazards. Presence of elevated amount of nitrate in groundwater has been reported due to the extensive use of fertilizers. Nitrate is a known

culprit behind methemoglobinemia and drinking water contaminated with nitrate can be carcinogenic. Electrochemical denitrification is one of the attractive technologies, which can be used in denitrification. However little attention is paid towards development of novel electrode materials considering the factors pertaining to efficient nitrate removal.

In this research, Optimized cathode and optimized anode combined into a cell has showed promising results in denitrification of groundwater. An electrochemical cell was developed and tested successfully for denitrifying actual groundwater samples. However larger scale testing/ studies would be needed prior to actual application. Once applied, this technology will provide an attractive solution to issues related to nitrite contamination.

**Project title : Identification of suitable species and genotypes for cut foliage and flower cultivation on rubber lands, (RG/2008/AG/02)**

**Investigator/s : Dr SMM Iqbal, Mr WADDS Wettasinghe, Dr VHL Rodrigo  
Rubber Research Institute, Sri Lanka.**

The natural rubber (*Hevea brasiliensis Mull Arg*) comprises an extent of 127, 500 ha in Sri Lanka. Further, it has been estimated that over 500, 000 people are dependents of this industry. Life span of a rubber tree is approximately 30 years with 5 to 6 years of immature period, which provides no income to the rubber grower. Moreover, rubber harvesting is confined to the morning hours of the day; hence the harvesters are generally considered to be underemployed with a spare time, which could be effectively utilized for productivity improvements and thereby to raise their livelihood.

Inter cropping rubber with economically important crops offers a practical option in this regard. Cut foliage and flower industry in Sri Lanka is booming by fetching both local and international market. Therefore, the present study was aimed at identifying suitable species of cut foliage and flowers for different growth stages (i.e. mature and immature phases) of rubber plantations.

With both immature and mature rubber, two sets of field experiments were conducted. Under immature rubber, three foliage plants namely Polyscia, Croton and Cane palm and under mature rubber three foliage plants namely Cane palm, Dracaena and Chinese grass were established as mixed and sole systems. Anthurium was planted under mature rubber and artificial shades.

Growth and quality parameters for cut foliage and Anthurium were assessed. According to the results, performance of cane palm in mix system with Croton and Polyscia showed better growth than the mono-system under immature rubber. Also, performance of Cane palm, Dracaena and Chinese grass under mature rubber with the mono-system showed better growth and economic returns than in mix system. Growing Anthurium under mature rubber provided the highest net economic benefits when compared to Anthurium under artificial shade and cut foliage plants. Protocols for growing suitable foliage plants under immature and mature rubber were also developed for rubber growers.

Note: Details of grants completed in 2014 are given in Annex 01.

## National Thematic Research Programme (NTRP)

The NSF initiated this novel contract research programme to address national research priorities. ‘Food Security’, ‘Water Security’, ‘Climate Change & Natural Disasters’ and ‘Energy Security’, were identified as the priority areas to start with, under the NTRP.

### ***Theme: Food Security***

The Thematic Research Programme on Food Security was initiated to address major issues related to the theme through research, and with a view to 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 impacts on the food security of the country.

After extensive discussions and revisions to improve and fine-tune the proposals, nine projects were awarded under these five Programmes in 2012 and 2013, and continued during 2014. The details of the ongoing grants are given in Annex 02.

These projects are monitored very closely by the Research Division with guidance of the Steering Committee. As a mechanism for progress monitoring, discussions with research teams were held regularly. When necessary, they were invited to do presentations and highlight any constraints impeding the progress. Project sites were visited for verification purposes and to provide positive feedbacks.

The Second Research Coordination Meeting (RCM) was held in order to see whether the projects have progressed according to the Activity Plans provided. Based on the achievements, funds were recommended for the next year to continue the project activities. Activity Plans were discussed in detail at the RCM, and were agreed upon by the Steering Committee, and the project teams.

### ***Theme : Climate Change and Natural Disasters***

The Thematic Research Programme on Climate Change & Natural Disasters was implemented to address major issues through research, with a view to minimize hazards of climate change & natural disasters by mitigation and adaptation.

A Steering Committee on Climate Change and Natural Disasters, comprising ten (10) expert scientists in the area, provided guidance for implementing this programme.

In 2014, the Theme Paper related to this programme was developed. Eleven projects have been identified under six Strategic Thrust Areas viz., Mainstream Climate Change Concerns into National Planning and Development Processes; Climate Change Resilience on Settlements; Human Health Key Economic Drivers and Affected Sectors; Minimize Climate Change Impacts on Food Security; Safeguard Natural Resources and Biodiversity from Climate Change Impacts; Future Climate, Climate Scenarios and Natural Disasters and Early Warning, Mitigation.

The selected research projects would be implemented through institutional partnerships, engagement of research institutions, government institutions and the private sector, which facilitate the integration of information and knowledge in decision making.

Awareness creation on Climate Change & Natural Disasters

- ❖ A stakeholders meeting was held at the NSF on the 10th March to include “Natural Disasters” to the originally identified theme of “Climate Change”.

- ❖ A discussion was held on the 5th Assessment Report of the Inter-Governmental Panel on Climate Change (IPCC) on the 3rd June, 2014 at the NSF. The main objective of this discussion was to create awareness on the recommendations of the 5th Assessment Report of IPCC, which was released early this year; to identify the impacts highlighted in the report concerning Sri Lanka and how these recommendations would influence Sri Lanka in future actions. The way forward through Technology and Research sectors was highlighted in this discussion. Hon. Patali Champika Ranawaka, Minister of Technology and Research was the Chief Guest.
- ❖ A public lecture on “ El Nino: Influence on Sri Lanka” was delivered by Prof. W. L. Sumathipala, Chairman of the NSF on 23rd June, 2014 at the NSF. Hon. Patali Champika Ranawaka, Minister of Technology and Research, graced the occasion as the Chief Guest.

### ***Theme: Water Security***

The UNESCO Participation Programme (Awareness and participation of stakeholders in practice of Integrated Water Resource Management) was initiated with the objective of creating awareness among farmer communities on integrated water resource management and water conservation.

In order to achieve the above, 10 Awareness Workshops were organized for relevant personnel (Agriculture Instructors, Agriculture Research Production Assistants, Samurdhi Officers, Grama Niladaris, Development Officers and Vidhatha Officers) including farmer organizations at selected divisional level service agencies in 06 Districts as follows:

<b>District</b>	<b>Divisional Secretariats</b>
1. Anuradhapura	Madawachchiya, Kahatagasdigiliya
2. Monaragala	Wellawaya, Buttala
3. Nuwara-Eliya	Kothmale, Hanguranketha
4. Jaffna	Thenmarachchi, Wadamarachchi
5. Kandy	Minipe
6. Puttalam	Puttalam

An Awareness was created among farmers under the following topics:

- ❖ Role of ecological farming in IWRM
- ❖ Soil and water conservation
- ❖ Rainwater harvesting
- ❖ Use of groundwater for Agriculture

Handouts and booklets were distributed in addition to the verbal presentations. There was an interactive discussion after the presentations where the Resource Persons elaborated on issues related to water and health and other pressing issues relevant to the particular area.

A DVD on IWRM was produced in Sinhala and Tamil languages. The objective of producing this DVD was to come up with another tool for awareness creation. This was circulated to schools in the Divisional Secretariats where the workshops were held and also to Divisional Secretaries and the farmer organizations that participated.

## Workshop on Effective Proposal Writing

An Effective Proposal Writing Workshop to create awareness on submitting research proposals of high standard to the NSF Competitive Research Grants scheme was held on 09th December at the NSF with the participation of 102 prospective applicants.

## Capacity Building and Productivity Improvement

### *Research Scholarships*

Notably, at present, there is a 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. There are 13 ongoing Research Scholarships and one completed scholarship. However, applications for new scholarships were not entertained in 2014, due to financial constraints.

## 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 in the acquisition of equipment and spare parts for research equipment that is, in general, too costly to be purchased by Research Institutions and Universities. Further, these schemes facilitate and support infrastructure development of research laboratories in order to create a sustainable research culture. Eight equipment grants worth LKR 7.29 M have been awarded in 2014. The details of these grants are given in Annex 3.

## Granting recognition to high performing scientists

The NSF Research Awards Ceremony 2014 was held on 23 December 2014 at the NSF to confer awards under the following 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 05 & 06.

### **NSF Research Awards**

The NSF Research Awards are given annually to the 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.

Two NSF Research Awards and three Commendation Certificates were awarded at this years' Awards Ceremony. The details are given in Annex 05.

### Support Scheme for Supervision of Research Degrees (SUSRED)

The Award 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 also encourages universities and research institutions to promote and facilitate postgraduate research training.

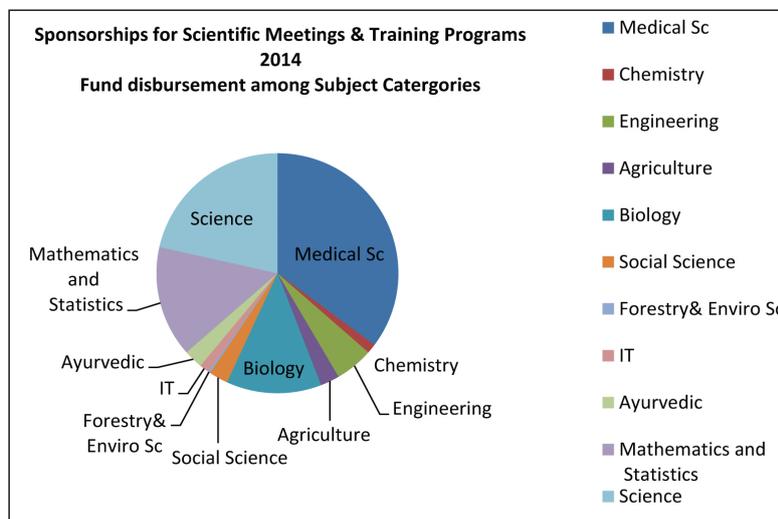
Six supervisory teams were successful in securing SUSRED Awards for one PhD and five MPhil degrees completed during 2012 and 2013. Details are given in Annex 06.

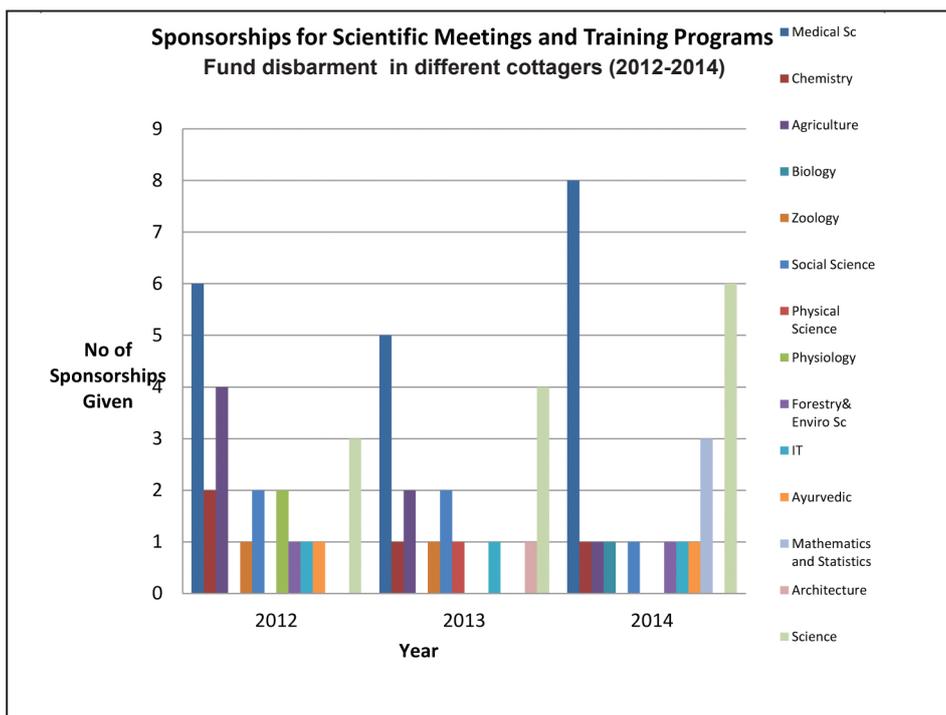
### Third World Academy of Sciences/ National Science Foundation (TWAS/ NSF) Young Scientist Award

One winner in the fields of Biology was awarded the TWAS/ NSF Young Scientist Award 2014 at the same ceremony.

## Sponsoring Scientific Events and Training Programs

The scheme of 'Sponsoring Scientific Events and Training Programs' intends to provide assistance to both state and non state research institutes, educational institutes, universities and well established S & T associations to conduct scientific meetings, training programs , workshops and conferences. This enhances opportunities for Sri Lankan scientists to interact with each other and with foreign eminent Scientists. Hence, facilitate development and dissemination of Science & Technology of Sri Lanka. 29 Sponsorships worth Rs. 4,307,260 were provided during 2014 covering various disciplines in Basic and Applied Science, Social Science and novel sciences like Information Technology. The graph below depicts the distribution of sponsorships among different disciplines. Highest amount funds have been provided to the medical sector followed by multidisciplinary conferences. The least amount of funds have been provided to the IT sector.







## Technology Transfer

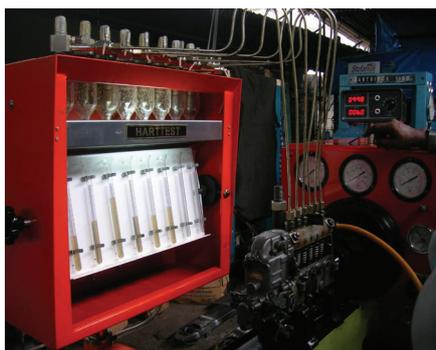
The NSF functions to harness technology development and innovations to generate new or improved products and services through different strategies viz., providing funds, facilitating IP awareness & protection, and supporting relevant policy development.

The two Technology Grant Schemes namely “Support for Technology Development” and “Support for Start-up business based on new technologies” continued to support technology developers in State sector, non-State sector (industry) as well as individuals.

### Completed technology projects with tangible outputs

#### *Quality improvement of Diesel Fuel Pump Test Bench*

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.



### ***Introduction of an energy efficient and environmentally friendly new technology to reduce coconut shell Charcoal***

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. More units are being manufactured for the interested clients and the second unit is also installed at Warakapola.



### ***Growing the algae Spirulina to overcome malnutrition of children and pregnant and lactating mothers in villages in Sri Lanka***

The project is to cultivate Spirulina under farm conditions to support the villagers in the Kurunegala district to overcome malnutrition, provide training and limited employment opportunities to both village youth and women (part-time basis) and to market as powder at an affordable price to villagers specially in the North Western Province. The output creates new ventures of transferring the developed technology to identify consumable forms of Spirulina either in tablets or capsules.



### ***Development of an Aloe vera (Aloe barbadensis Miller) incorporated ready to serve beverage***

The overall objective of this project is to develop an Aloe vera incorporated ready to serve beverage as an alternative beverage, which is a preventive measure to overcome type 2 diabetes mellitus (T2DM) - a pandemic disease in Sri Lanka.



### ***Improvement and field testing of a locally developed milking machine for small scale farmers***

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. The grantee is willing to establish his own business to introduce the new product to milking farmers



### ***Scaling up the invention of spherical container for natural rubber latex industry***

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 centrifuged latex. A 21,000 L spherical latex container was fabricated and installed at “Lalan Rubbers”, Warakapola factory. The Lalan Rubbers has conducted two test runs and results were compared with the conventional cylindrical tanks. Accordingly, the new design enables 42% saving of coagulated rubber, 19.5% saving of Ammonia usage and 59% of labour saving from the point of tapping to transportation after centrifuging. As such, the “Lalan “ recommends the use of spherical container instead of conventional cylindrical container in economical terms. A mould for 1500 L capacity spherical container was also made using rotomound process and 02 spherical containers were made at the Richard Peiris Polymers (Pvt.Ltd.). Discussions are underway between the RPC Polymers and the grantee for commercial scale production of 1500 L spherical vessels.



### ***Assessment of socio-- economic viability of simplified hydroponics to improve the housefood production and develop a strategy for commercialization***

The objective of this project was to assess the socio-economic viability of the simplified hydroponics system and to develop a market strategy for adoption the system for household vegetable production. The project was carried out in the Colombo and Kalutara districts involving 20 households, 10 schools and 08 institutions. The project revealed that the simplified hydroponic system is an affordable technology for household vegetable production and most suitable for those having limited land/space for conventional home gardening. Capsicum, Chili, brinjal, tomato, cabbage etc., were tested out for flowering and fruiting when grown in grow boxes. Sand and rice hull were used as the growth medium. A patented formulation was the nutrient medium used. A commercialization strategy was also proposed at the end to make available the quality nutrient solution and technology of making hydroponic medium in commercial basis.



### **Impact Assessment Survey**

A questionnaire was developed to conduct an impact assessment survey on the completed technology grants. Four projects were assessed during phase I, an a pilot survey

<b><i>Grant Number</i></b>	<b><i>Project title</i></b>
RG/2008/SI/01	Manufacturing an environmentally safety cargo boat for local transportation
RG/2007/SI/03	Height adjustable coconut plucking pole
RG/2006/IND/02	Identification of means and methods to enhance the productivity (Economical yield and the quality) of Gherkins grown inside green houses
RG/2007/SI/02	Design and Development of a signal meter

Analysis of the information gathered is in progress.

### Wider publicity for completed technology grants

An initiative was taken to publish a series of review articles on the NSF completed technology projects in “Sunday Times” newspaper with the objective of attracting investors and enhancing commercialization prospects. The first article on “Height adjustable coconut plucking pole” was published on the 30th November, 2014. Many queries were received from stakeholders in response to this article indicating willingness to buy the product.

### Monitoring of ongoing technology Grants

Monitoring the progress of ongoing grants was proceeded with 36 site visits and 06 meetings. Funds were disbursed appropriately for the ongoing projects. A progress review seminar was held on the 24th July, 2014.

### Follow up on R&D outputs of NSF funded research projects and projects conducted with funding from other sources.

Out of 05 summery reports of NSF research projects completed in 2013, 02 projects were selected for consideration under the technology grant scheme. Accordingly, the following two grants were awarded with a view to further develop the outputs to the level of commercialization.

*Project Title* : Scaling up studies of developing intelligent textiles by introducing two Intelligent functionalities to cotton and polyester cotton textiles and integrating flow processes to local textile industries for value addition to their garment products, **(TG/2014/Tech-D/04)**

*Grantees* : Prof. R.M.G. Rajapakse

*Institution* : University of Peradeniya

*Category* : State Sector

*Allocation* : Rs 7, 201,000.00

*Project Title* : Fault detection, isolation and restoration using a multi-agent base distribution automation system, **(TG/2014/Tech-D/05)**

*Category* : State Sector

*Grantees* : Dr K.T. M.U. Hemapala

*Institution* : University of Moratuwa

*Allocation* : Rs 2,500,000.00

### Follow- up of NSF Completed Technology Grants

The technology developed (Growing Spirulina under scale up conditions) under the project TG/2012/Tech-D/09 was transferred to SAP Enterprise (Pvt) Ltd. A new technology grant was awarded to SAP Enterprise (Pvt.) Ltd., to develop a technology for capsule formulation from Spirulina powder.

<i>Project Title</i>	: Capsule formulation and development of Spirulina blue green algae, (TG/2014/Tech-D/06)
<i>Grantees</i>	: SAP Enterprises (Pvt.) Ltd.,
<i>Category</i>	: Non State Sector
<i>Allocation</i>	: Rs. 1,500,000.00

### Recognition of contributions to National Science & Technology development

#### *a) National Awards for Science & Technology Achievements 2014 (NASTA Awards)*

The prime objective of the National Awards for Science & Technology Achievements 2014 (NASTA Awards) scheme was to encourage and motivate researchers, technologists, engineers, industry and other relevant stakeholders for application of science and technology towards socio-economic benefits of the country.

Wide publicity was given to the Awards scheme through a range of media to attract prospective applicants. Around 3000 companies and institutes recorded in the technology database maintained by the Technology Division were also contacted. Out of 137 applications received, 10 applications were selected through a stringent evaluation process to be conferred with five national awards and five certificates of merits (under nine categories). The evaluation panel consisted of 10 experts in various fields of Science & Technology. Arrangements were in place to conduct the ceremony and a date for same was awaited from the Presidential Secretariat as at 31 December 2015

#### *b) NSF Technology Awards*

Evaluation of final reports and site visits were done by external experts in connection with the evaluation of completed technology projects for consideration for NSF Technology Awards. Two successfully completed projects were selected for Awards. The Award Ceremony was held along with NSF Research Awards on 23rd December, 2014 and the two Awards were conferred.

### Consultancies in patent drafting, filing and awareness building activities

Consultancies were provided to nine (09) inventors on filing patent applications locally and under PCT. Three (03) Science and Technology Officers obtained information on patent drafting and searching for novelty of an invention.

### Awareness programme on "Lightning hazards and protection"

This programme was conducted on 24th March, 2014 at Densyl Kobbekaduwa Maha Vidyalaya, Uragasmanghandiya. The resource person was Dr Mahesh Edirisinghe, Dept. of Physics, University of Colombo. There were about 30 participants of which majority were inhabitants in the area where lightning incidents were reported.

## Innovation week

In parallel to the Science Week-2014 implemented by the Ministry of Technology and Research, the Technology Transfer Facilitating Cell - “One Stop Tech Spot” was launched on the 04th November, 2014 creating a workable platform for investors and inventors for commercialization of grant outputs. “Patent Help Desk” was reinstated in the Cell creating opportunities for inventors to search for patent information and obtain consultancies on patent protection.

# S&T POLICY RESEARCH AND STRATEGY FORMULATION



## S&T Policy Research and Strategy Formulation

The NSF also function as a research arm in the area of S&T Policy by providing evidence based policy recommendations for policy formulation and addressing the gaps in the existing policies in the country aiming towards rapid socio-economic development in the country through Science Technology and Innovation.

The main focuses made on these directions were:

- ❖ Undertaking science, technology and innovation (STI) policy research in the areas of importance to make recommendations towards policy formulation.
- ❖ Developing various databases relevant to all sectors of STI that will be useful for decision making.
- ❖ Undertaking public awareness programmes and public discourses on nationally important issues related to the areas of STI.
- ❖ Investigating, collecting and securing Indigenous Knowledge (IK) that exists and being practiced in Sri Lanka.
- ❖ Undertaking capacity building of human resources especially in the areas of Social Sciences and Indigenous Knowledge.

### Science, technology and innovation (STI) policy research

#### *National Research Development and Innovation (RDI) Survey*

NSF has been conducting regular National Research, Development and Innovation (RDI) Surveys once in every 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 on Research, Development and Innovation (RDI), engagement of Human Resources in the Science, Technology and Innovation (STI) sector, and the outputs of the STI sector in spears of publications, patents, technologies, innovations etc..



The Survey is conducted following international standards laid out by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Organisation for Economic Co-operation and Development (OECD). The scope of the Survey encompasses higher education sector, S&T institutions, R&D institutions, industrial sector and the local and foreign non-government organizations (NGOs).

During 2014, the National RDI Survey 2013 was commenced, which collected the relevant data pertaining to the year 2013. The data collection was ongoing and the respective “Sri Lanka Science, Technology and Innovation Statistical Handbook 2013” is planned to be published by early 2015.

#### ***Survey on Grants awarded by the NSF during the period 1998-2008***

The survey was conducted to measure and assess the output of the NSF Research grants awarded during the period of 1998-2008 and also to find out the shortcomings, gaps and weaknesses of the NSF Competitive Research Grant Scheme. The technical report of the survey will be ready by early 2015.

#### ***Tracer study of Postgraduates passed out from the national universities during the period 2009-2012***

The main objective of the study is to investigate the employability of postgraduates produced by the local universities. The survey was initiated in January 2014 and the data collection and data entry was in progress. The technical report will be made available in 2015.

### **Public awareness programmes and public discourses on nationally important issues related to the areas of STI**

#### ***Panel Discussion on ‘Using Technology and Innovation for Equitable Growth with Environmental Sustainability’***

A Panel Discussion on “Using Technology and Innovation for Equitable Growth with Environmental Sustainability” was organized on 27th June 2014 at the Auditorium of the NSF. The discussion focused on the following areas:

- ❖ The use of Science, Technology and Innovation for economic development.
- ❖ Identify the social, economic, political, environmental and structural factors involved critically in the development process.
- ❖ Cultivate inter-disciplinary approach on planning and management of equitable growth with environmental sustainability.



The panel discussion was participated by the Minister of Technology and Research, Hon. Patali Champika Ranawaka, economists, social scientists, policy planners and researchers. The discussion yielded important information and recommendations that can be used for the policy interventions made in this direction.

### ***Seminar on ‘How Sri Lanka can escape middle income trap’***

A seminar was organized to initiate an intellectual discourse on how Sri Lanka can move out from lower middle income level to upper middle income level by investing more in Science and Technology. The discussion focused on economic and S&T status of the country and the areas that can be utilized and should develop to improve the sustainable economic development of the country.



The Minister of Technology and Research Hon. Patali Champika Ranawaka, graced the occasion as the Chief Guest. Prof. S.S. Colombage and Dr Lalithasiri Guneruwana presented the current status of economy of Sri Lanka and trends in economic achievements of the developed and developing countries in the world with examples of the huge investments they have made in the areas of science and technology and the success made.

Mr Ashoka Abeygunewardena, Advisor to the Minister of Technology and Research, moderated the discussion. Around 110 scientists and professionals working in the relevant areas of S&T and economics actively participated in the discussion.

### **Discussion on how Sri Lanka can achieve economic development through investing more on research and development: Introduction to national research and development investment Framework 2015-2020.**

A discussion was conducted at the Seminar Room, Faculty of Humanities and Social Sciences at The Open University of Sri Lanka to introduce the National Research and Development Investment Plan 2015-2020 developed by the Ministry of Technology and Research that aimed at aligning science and technology initiatives towards national development agenda of the country. The discussion was participated by the Minister of Technology and Research Hon. Patali Champika Ranawaka, as the Chief Guest. Prof. S.S. Colombage discussed the challenges pertaining to Sri Lanka’s Future Economic Growth while Mr Ashoka Abeygunewardena, Advisor to the Minister of Technology and Research, moderated the discussion and also introduced to the National R&D investment plan. The academic staff of the Open University of Sri Lanka participated and actively exchanged views on the subject and how university researchers could contribute to the success of the investment programme.

### **Vidukawaya Public Lecture series**

During the year under review, the National Science Foundation (NSF) initiated a public lecture series in collaboration with the NSF Working Committee on Social Sciences and NSF Working Committee on Indigenous Knowledge aiming at creation of a platform for the scientific community and the general public for the discourse on important issues in the country and to make the latter aware on research findings as well as exchanging ideas and views for future endeavors towards decision making process.



Accordingly, 03 public lectures were conducted during 2014 under the above programme.

### **Sri Lanka's development future: an economic perspective**

The lecture discussed on the challenges faced by Sri Lanka in accelerating economic growth while securing macroeconomic stability. The importance of expanding the country's growth potential through productivity improvements by means of technological progress, human capital development, knowledge and innovations etc. and having policy reforms to improve the investment scenario fostering a knowledge-based economy was emphasized.

### **Social Sciences and Public Policy**

The second lecture of the series was conducted on 26th June 2014 at the NSF auditorium with the participation over 30 stakeholders. The link between public policy and Social Sciences, human nature, culture and social systems, potential contribution of Social Sciences, public policies and policy choices were discussed in detail. During the discussion it was highlighted that the major goal of Social Sciences should be to influence the public policy by generating practical knowledge that can help policy makers to make informed decisions.

### **Role of Social Sciences in contemporary society**

A public lecture on 'Role of Social Sciences in contemporary society' was conducted by on 07th November 2014 at the NSF Auditorium in parallel to the "National Science Week 2014". Academics and professionals representing government Ministries, Departments, Research Institutes, Universities, and Science & Technology related institutions including NGOs and the general public participated and exchanged their views and experiences on different aspects, and debated on the topics discussed.

## **Investigating, collecting and securing Indigenous Knowledge (IK) existing and practiced in Sri Lanka**

### **Seminar on "Epistemology of Indigenous knowledge of Sri Lanka"**

The objective of the Seminar was to open a dialogue on epistemology of Indigenous knowledge that exists and practiced in the country. The discussion also focused to develop a unique scientific methodology to conduct research in the areas of indigenous knowledge. The experts working in different areas of IK made presentations on various topics. The Minister of Technology and Research Hon. Patali Champika Ranawaka, addressed the gathering as the Guest Speaker. Researchers and practitioners working in the area of IK and

Officers representing Ministries, government departments, Research Institutes, Universities, other Science & Technology related Institutions participated and exchanged their views, shared their experience and debated on different aspects of IK such as Intellectual Property Issues and methodology for conducting research in the area of IK. A group discussions was conducted to obtain ideas on the methodologies that can be adopted to investigate the IK.



A press conference was held at the same venue on the 2nd August 2014 prior to the Seminar to make the public awareness on the new steps taken by the Ministry in this direction. The Minister of Technology and Research Hon. Patali Champika Ranawaka was presented at press conference giving information and answering the questions raised by the media personnel on the issues relevant to the seminar.

### ***Investigating the Indigenous Knowledge (IK) existence and practiced by indigenous and Ayurveda Medical practitioners in the country***

A workshop was organized on indigenous knowledge that exists and practiced by the Indigenous Medical practitioners in the country on 24th June 2014 at the NSF Auditorium. The main objective of this workshop is to investigate and record the knowledge survived among indigenous medical practitioners for preservation purposes to prevent piracy and for future use. The Minister of Technology and Research Hon. Patali Champika Ranawaka participated as the guest speaker. Six Indigenous medical practitioners (“Paramparika”) participated as Resource Persons and shared their knowledge on different aspects of indigenous medical practices. Ayurveda Medical Officers, Indigenous medical practitioners participated in the programme also shared their knowledge, views and experiences during the discussion that followed by the presentations.





### ***Investigating the Indigenous Knowledge (IK) existence and practiced by farmers in indifferent regions of the country***

A series of workshops were conducted at different regions of the country to collect information on indigenous knowledge that exists and practiced by the farmers in the country in view to record and document them for the preservation for future purpose as well as to prevent piracy of the knowledge. Information gathered will be investigated to use along with current farming practices to promote an eco- friendly farming system in the country.

Accordingly, four workshops were conducted in the following areas with participation over 100 farmers in each area

- ❖ Ambepussa ( Gampaha district) in the Western Province - 20<sup>th</sup> February
- ❖ Badulla ( Badulla District )in the Uva Province - 30<sup>th</sup> May
- ❖ Balangoda ( Rathnapura district) in the Sabaragamuwa province - 29<sup>th</sup> July
- ❖ Kebithigollewa ( Anuradhapura District) in the North Central Province - 3<sup>rd</sup> December

### ***Workshop on Traditional Martial Arts***

Above workshop was held on the 2nd October 2014 at the District Secretariat, Rathnapura with the participation of the traditional martial arts performers. The objective was to explore and collect information related to traditional martial arts and investigating its scientific background for preservation and future use. The workshop included several demonstrations related to traditional martial arts in the Sabaragamuwa province.

### ***Public Seminar on Indigenous Knowledge and Development***

A seminar was held on the 4th November 2014 at the NSF Auditorium with participation over 50 participants in parallel to the National Science Week organized from the 14th-10th November 2014. Following areas related to the indigenous knowledge were discusses at the Seminar.

- ❖ Indigenous medicine
- ❖ Indigenous architecture
- ❖ Indigenous agriculture and irrigation
- ❖ Iron industry in Sri Lanka

The purpose of the seminar was to create a public awareness and motivate people on exploring indigenous knowledge and technologies related to the above areas, which were used by Sri Lankans for more than 3000 years in the past and some of which still can be used for sustainable and environmental friendly development activities.

### Promote capacity building of human resources especially in the Areas of Social Sciences and Indigenous Knowledge

#### **Workshop on “Social Sciences research and comprehensive research proposal development”-16 and 17 July 2014**



A Workshop on “Social Sciences research and comprehensive research proposal development” was successfully held at the National Science Foundation (NSF) on July 16th and 17th, 2014.

The aim of this Workshop was to train researchers and scientists on writing successful research proposals for seeking funds from local and foreign research funding organizations, particularly in the areas of Social Sciences.

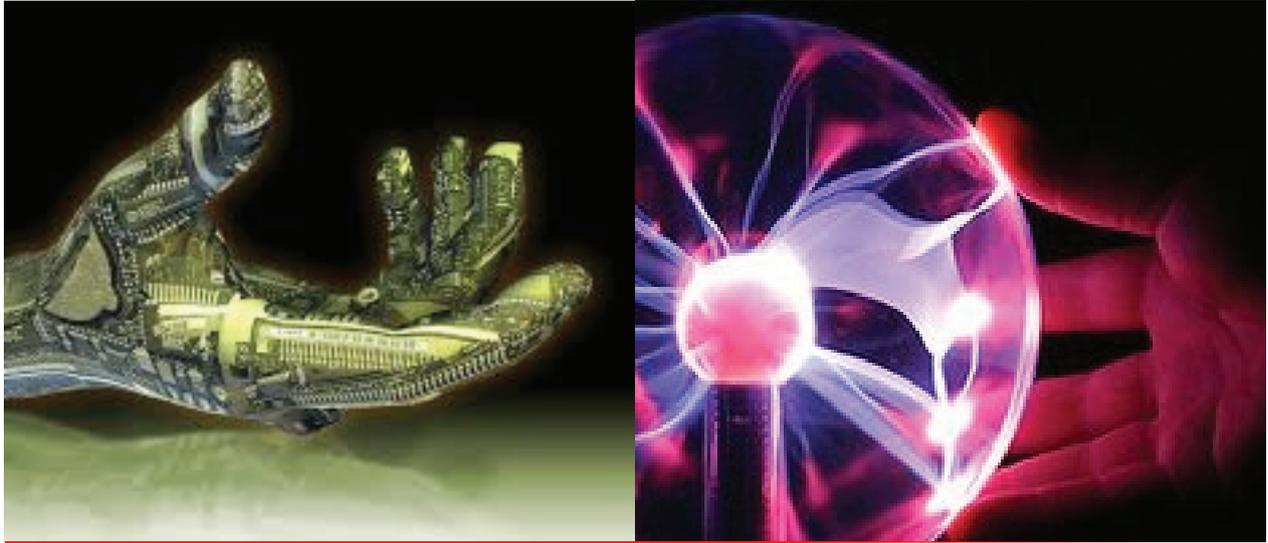
The resource persons involved in this programme were Prof. Indralal de Silva, Prof. G.I.C Gunawardena, Prof. Tudor Silva, Prof. S.S Colombage and Dr Hema Goonatilake who are the members of the NSF Working Committee on Social Sciences. Thirty five participants from higher education sector, research institutes, government institutes and private organizations were trained in the Workshop.

The programme included four sessions on a). Features and components of a good research proposal; b). Problem identification, theory and policy relevance; c). Literature review; and d). Identification and development of research methods for qualitative research and quantitative research. Each session was followed by a Question and Answers session and a group activities. During the group activities participants were given hands on experience to prepare their own research proposals and presented them to the Expert Panel who gave further advice and comments to improve those proposals to be in order.

#### **Workshop on Ethics in Research**

A Workshop on Ethics in Research was held on 27th November 2014 at the NSF auditorium for the scientists engaged in research to make them aware on ethical issues pertaining to the scientific research and to promote good ethical conducts among researchers. The workshop was conducted in an interactive manner and thirty eight (38) researchers and scientists were trained in the workshop.

SCIENCE  
EDUCATION AND  
POPULARIZATION



## Science Education and Popularization

Science Popularizing activities are conducted to popularize Science and Technology among the people of Sri Lanka, which focuses mainly on school children, but also takes into consideration the general public, and scientific community towards this direction. The following activities were conducted during 2014.

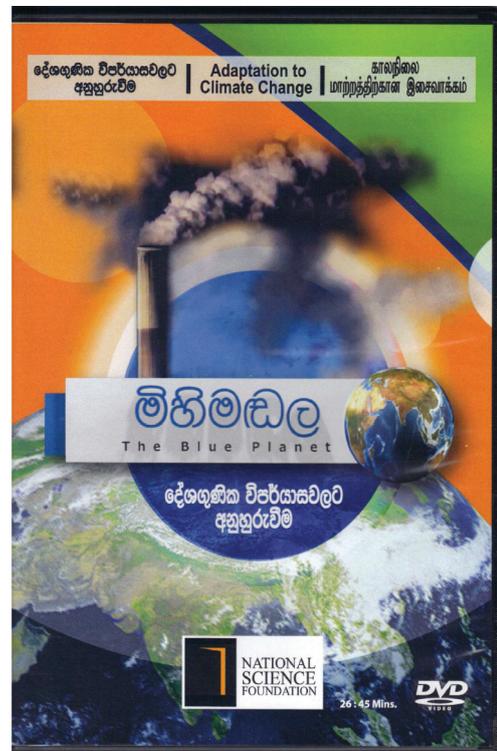
### Use of Mass Communication media to reach diverse target groups

“Mihimandala” is a series of short video programmes (20 - 25 minutes) produced in (Sinhala, Tamil, and English) under different scientific topics targeting the general public.

Phase II of Mihimadala programme commenced in 2014 targeting the production of videos on 15 topics to be completed by end of 2015.

During 2014, video programmes were produced on the following topics in English, Sinhala & Tamil languages.

- ❖ Health & Lifestyle
- ❖ Robotics and its Future
- ❖ Resilience to Climate Change
- ❖ Bio Mimicry for development of science
- ❖ Oral Health



## Increasing the availability and accessibility of authentic scientific publications

### Vidurava Science Magazine

The Vidurava Science Magazine, which is published as a Science Bulletin since 1978 is one of the oldest Science Magazines in the arena. Three issues of the Magazine is published in January, June and November (Special issue) each carrying a specific theme. Three language version (Sinhala, English & Tamil) are published.

Following issues of vol. 31 were published during the year 2014.

Issue No 1.

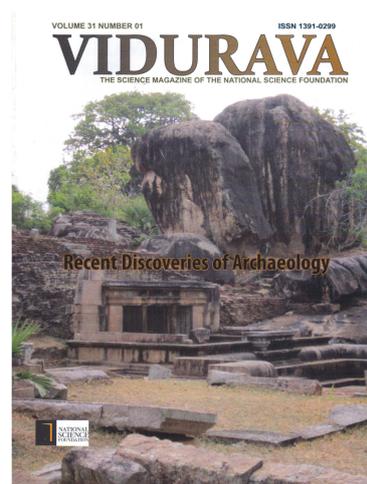
Theme: Recent Discoveries of Archaeology (Sinhala, Tamil & English)

Issue No 2.

Theme: Mathematics in Day to Day Life (Sinhala & English versions)

Special Issue:

Theme: Space Technology for the benefit of Human Beings (Sinhala & Tamil versions)



The Special issue (Sinhala and Tamil versions) was distributed among the participants of the World Science Day 2014 Schools Programme while January issue was distributed among the school Science Societies registered with NSF, Vidatha Centres, University Science Libraries, Provincial Science Coordinators, and Zonal Science Directors.

### Newsletter

The “*Vidya*” Newsletter reports information on various activities organized by the NSF such as seminars, workshops, conferences. It also provides information on the research grants and travel grants administered by the NSF.

The January issue was printed and distributed, April issue was at print ready stage & the combined July/October issue was at the compiling stage as at 31 Dec.2014.

### Science booklets for children

Based on a concept of the Hon.Ministry of Technology & Research, to improve the readership & knowledge on scientific concept among school children, a new programme was initiated. Under this programme a series of science book and booklets are planned to be published and distributed specially among the under privillage schools. Under the programme following activities were conducted during 2014.

### ❖ *New Books :*

Four manuscripts, on, Biotechnology (Dr Suneth Sooriyapathirana), Indoor & outdoor air pollution (Prof Ranjith Mahanama), “Aruma puduma gas wel” (Dr Sudheera Ranwala), and Nuclear Technology (Prof. Prinath Dias) were selected for publishing. All were at the reviewing stage.

### ❖ *Reprints of Popular books :*

Ganitha Vinodaya, the Sinhala version of “Mathematics can be Fun” authored by Y. Perelman was reprinted (5000 copies) and distributed among 2713 underprivileged schools in collaboration with the Mathematics Branch of Ministry of Education.

## School Science Society (SSS) programme

❖ Seventy two (72) new School Science Societies (Sinhala medium – 51 & Tamil medium – 21) registered with the NSF during the year 2014. The total number of schools science societies registered by the end the year was 788.

❖ Services of local scientists were provided to 14 schools registered with the NSF on their Science Days.

❖ Workshop on Science Drama

A two-day residential workshop to train a selected group of 50 science & drama teachers of schools registered with NSF in the Western and the Sabaragamuwa Provinces was organized on 29 & 30 May 2014 at the National Institute of Education, Maharagama. The objective of this workshop was to make the teachers aware on the important role drama could play in science communication and to enhance the knowledge in script writing for science dramas. Dr Jayantha Wattavidanage, Mr Jayalal Rohana, Mr Thusitha Malalasekara and Mr Sugath Watagedara served as Resource Persons.

❖ School children and teachers of the registered schools were provided opportunities for participation at 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 2014 Schools Programme.

## Inter School Science Society Competitions – (ISSSC) 2014



Inter School Science Society Competition - 2014 was organized during the period September - October 2014. Seven competitions (short science drama, role play of scientists, viridu poems, manual posters, space models, digital storytelling, and science fictions) were conducted under the theme “Space Technology for the benefit of Human Beings” among the school science societies registered with the NSF.

The first round of competitions (drama, role play, and viridu) were held in Colombo, Kandy and Anuradhapura. The final round was held at the Mahabodhi Hall, Maradana on 17 and 18 October 2014.

A competition for teachers of the registered School Science Societies was also conducted for the “Teachers” Award for promoting science among the school children”.

The winners of the ISSSC 2014 were felicitated at the World Science Day 2014 Schools Programme held at the BMICH on 10 November 2014.

### World Science Day Schools Programme - 2014

The World Science Day 2014 Schools Programme was held on 10 November 2014 at the Main Hall of the BMICH under the theme “Space Technology for the benefit of Human Beings”. School children and teachers of the school science societies registered with NSF, the winners of the competitions conducted by NSF, scientists, academics, and media personnel were invited for the event and around 1600 personnel participated. Hon. Minister of Technology & Research participated as the Chief Guest while the Keynote



Address on “Space Technology for the benefit of Human Beings” was delivered by Dr Sarath Gunapala, Director, Centre for Infrared Photo-detectors, California Institute of Technology, NASA, USA.

Winners of the following competitions were felicitated at the World Science Day Programme.

- ❖ Inter School Science Society Competitions
- ❖ Teachers’ Award for Promoting Science amongst the School Children
- ❖ Prof. M.T.M. Jiffry Memorial Award for Popularization of Science
- ❖ Star Rating (the best performing School Science Societies which are registered with the NSF)
- ❖ Science Research Project Competition (SRPC) and Sri Lanka Science & Engineering Fair
- ❖ Digital story telling competition for undergraduates registered under NSF University Science Society Programme



## University Science Society Programme (USSP) - 2014

The objectives of the University Science Societies (USS) Programme are, to create a platform for science undergraduates to develop their knowledge and skills in national activities, enhance scientific communication and writing skills of the undergraduates, utilize the knowledge of science undergraduates to popularize science for the well-being of the citizens in Sri Lanka, improve the acceptance of science among university qualified A/L students and to facilitate learning of science among school children and university undergraduates.

Twenty nine (29) USS were registered with the NSF at the end of 2014. Official launching of the programme was held on 19 March 2014. A digital story telling workshop was conducted for the undergraduates of the registered USS on 09 August 2014 followed by a digital story telling competition. Winners of the competition were felicitated at the World Science Day 2014 Schools Programme.

## Mobile Science Exhibition Bus

Under the directions of the Hon. Minister of Technology & Research a project proposal was submitted to the Department of National planning to purchase a bus to be used as a Mobile Science Exhibition. The bus is expected to serve as a centre where school children will be provided the opportunity to learn basic scientific concepts through hands on experience and in turn enhance their investigative ability, creativity and innovativeness. This would in turn contribute to popularize science and develop a science culture in the society.

## Collaborative work with institutes under the Ministry of Technology and Research to popularize science

### *Young Leaders of Science (YLS) Programme*

A new programme (Young Leaders of Science) was introduced for the first time for a set of students who performed high at the G.C.E A/L (2013) examination. The objectives of the programme were providing the students an opportunity to sharpen their creativity and improve inborn talents, provide broader knowledge on core areas of science common to both biological and physical science streams; improve soft skills including reporting and presentation skills and to promote team spirit and to obtain the contribution of the trained students to support under privileged schools within their localities through collaborative science projects.

The member of students participated in the programme was 23 and the programme was conducted over a period of 4 months from May to August. Eleven (11) visits to some institutes under the Ministry of T & R and 20 lectures / workshops on different aspects of Science and their applications were conducted.



### ***Science Days in collaboration with the Ministry of Technology and Research***

Five Science Days were organized in collaboration with the Ministry of Technology and Research in selected five schools with participation of around 2000 school children. An average of three science lectures were delivered in each Science Day Programme. School Science Society of the school was provided financial support and guidance to organize the activity.

### ***Funding Scheme to sponsor science education and popularization activities conducted by other institutes / organizations***

This scheme was implemented in 2013 with the objective of providing financial support for organizing scientific activities by other institutes / organizations including the institutes under the Ministry of Technology and Research, Universities, Research Organizations, and Schools registered with NSF.

Under the scheme, during the year under review, one million rupees was allocated for the establishment of an Astronomical Training Centre at St. Mary's College, Kegalle. Rs. 400,000.00 was provided as the first installment to the above school to commence the project.

The second instalment (Rs. 506,400/-) of the "Vidu Nena Dasuna" Sinhala Science Youtube channel Project by National Institute of Fundamental Studies was released to continue their activity. This project was started in the last quarter of 2013 and total amount approved was Rs. 896,000/-

### **Supporting Sri Lanka Olympiad Federation (SLOF) and grants for participation at International Olympiad Competitions**

Participation of the Sri Lankan teams of the following International Olympiad Competitions were sponsored by the NSF. The International Awards won are listed below.

<b>No.</b>	<b>International Olympiad Competition</b>	<b>International Awards won by the Sri Lankan students</b>
01-	15th Asian Physics Olympiad held in Singapore	1- Silver Medal 3- Honorable Mention
02-	International Olympiad in Informatics -2014 held in Taiwan	-
03-	8th International Olympiad on Astronomy & Astrophysics held in Romania	1-Bronz Medal
04-	International Mathematics Competition – 2014 held in South Korea Age category II (Under 14) –one group for individuals Age category III (Under 17)- two groups	2- Bronze Medals and 1- honorable mention 2- Bronze Medals for two teams
05-	International Mathematics and Science Olympiad Competition – 2014 in Indonesia	2- Gold Medals 2- Silver Medals 2- Bronze medal

### Awareness campaign on Nanotechnology

Resource persons were provided to conduct seven (07) awareness programmes on Nanotechnology organized by Vidatha Centres, during the year.

### Facilitate interaction between schools and research institutes/ industry/ universities

Under this programme, two visits were arranged (for 60 students of two schools) to the Industrial Technology Institute while three programmes were arranged at the National Engineering Research & Development (NERD) centre for 82 school children who won awards & certificates at the International Olympiad Competitions and Science Research Project Competitions of the NSF.

### “Vidya - Ganitha Athwela” for school children in underprivileged families

Under the guidance of the Minister of Technology and Research, National Science Foundation organized the following nine (09) educational programmes in science and mathematics for more than 1200 school children in underprivileged families targeting the G. C. E. (O/L) examination, 2014 .

Siri Parakumba Vidyalaya, Rajgirya	13 & 14 Sep
Buddhagosha Vidyalaya, Kalubowila	02 & 03 Oct
St. Mary's College, Dehiwala	02 & 03 Oct
Dharmasena Attigala Balika Vidyalaya, Kesbawa	04 & 05 Oct
St. Lucia's College, Kotahena, Col-13.	14 & 16 Oct
Ananda Vidyalaya, Modara	18 & 19 Oct
Dharmashoka Vidyalaya, Kadana	18 & 19 Oct
Mahasenpura M.V., Thissamaharamaya	25 & 26 Oct
Gageyaya Vidyalaya, Thissamaharamaya	25 & 26 Oct

Undergraduates in the University of Colombo and University of Ruhuna served as the resource persons in these programmes.

Participants were provided with O/L mathematics and science model papers and past papers, and difficult subject areas were explained. Special attention was paid to weaker students.

### Science Research Projects Competition (SRPC)

The Science Research Projects Competition (SRPC) is organized annually with the objective of enhancing the innovative thinking, creativity and the investigative ability amongst the school children in the country. The school children and the teachers who supervised the projects were guided on conducting science research projects following the scientific methodology through a series of workshops.

The SRPC 2013 was successfully conducted on 30 and 31 January 2014 at the NSF. Twenty five projects were presented by the school children. The best 10 projects were selected to participate at the SLSEF 2014. One project out of the 10 projects won ISEF Individual 1<sup>st</sup> Place while another four won ISEF Regional Awards. The awards were offered by Intel Excellence in Computer Science, Yale Science & Engineering Association, Ricoh Americas Corporation and American Meteorological Society at the Intel Science and Engineering Fair 2014, USA.

### **Sri Lanka Science and Engineering Fair (SLSEF)**

Sri Lanka Science and Engineering Fair (SLSEF) is organized annually by National Science Foundation and Institution of Engineers of Sri Lanka in collaboration with Ministry of Education and Intel ® Sri Lanka. The first Fair was organized in the year 2008.

Sri Lanka Science and Engineering Fair (SLSEF) 2014 was held on 25 February 2014 at the Institution of Engineers Sri Lanka (IESL) with the participation of 10 inventions selected from the Junior Inventor of the Year (JIY) Competition, and the best 10 Science Research Projects selected from the Science Research Projects Competition 2013. Two individual projects (from JIY competitors) and one group project (from SRPC) were selected as winners of the SLSEF 2014. They were given the opportunity to represent Sri Lanka at the Intel International Science and Engineering Fair (Intel ISEF) 2014, the world's largest pre-college science competition held from 11-16 May 2014 in Los Angeles, USA with the participation of nearly 1,800 of the world's most promising young scientists, engineers and mathematicians. Of the three projects, one project won the Second Award in the Electrical & Mechanical Engineering category whereas another project won the Fourth Award in the Computer Science category. The former had also won two special awards from American Intellectual Property Law Association and U.S. Agency for International Development.



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



## **S&T Infrastructure, Capacity and Partnership Building**

Maintaining International Liaison is another function of the NSF, the objective being to foster the interchange of scientific information among scientists in Sri Lanka and abroad. Accordingly, the division continued to maintain liaison with individuals, associations and institutions in other countries and to promote the visibility of Sri Lankan scientists internationally. During 2014, the activities performed were as follows:

### **Workshop on Phytocap Technology for Sustainable Waste containment**

The NSF in Collaboration with United Nations University Institute for Integrated Management of Material Fluxes and Resources (UNU-FLORES), the New Jersey Institute of Technology (NJIT), the University of Melbourne (UoM) and the Open University of Sri Lanka (OUSL) organized a regional workshop on Phytocap Technology for Sustainable Waste Containment from May 29-30, 2014 at the National Science Foundation with the participation of representatives from eleven regional countries. There were nineteen foreign participants and sixteen local participants representing different institutions.

The main objective of the proposed workshop was to introduce the scientific basis of Phytocap Technology to local governments and regulators to adopt Phytocap as a practical and economical option to improve solid waste management for all nations in the Indian Subcontinent.

### **Global Research Alliance on Agricultural Greenhouse Gases**

National Science Foundation is the focal point of the Global Research Alliance on Agricultural Greenhouse Gases which focuses on research, development and extension of technologies and practices that help deliver ways to grow more food and more climate-resilient food systems without increasing greenhouse gas emissions.

Prof. Thakshila Serasinghe, Contact Scientist of the Livestock Research Group attended the annual meeting of the Global Research Alliance on Agricultural Greenhouse Gases which was held from 14th to 15th November, in Yogyakarta, Indonesia along with the Asian-Australian Association of Animal Production Societies (AAAP) Conference.

## Global Forum of Sri Lankan Scientists

Based on the recommendations made at the Global Forum held in 2011 in Sri Lanka twenty five projects were initiated, and out of the might projects have been completed. Information on the completed projects is given below.

- ❖ **Establishment of a high throughput genomics facility** - ‘Credence Genomics’ Company was set up under this project to carry out research and testing related to high throughput genomics.
- ❖ **Establishment of a Bioinformatics service that caters to the global need for sequence analysis of plant and animal genomes** - This service was successfully commenced and is in operation by the Credence Genomics Company.
- ❖ **Initiation of a collaborative M.Sc. Course in Stem Cell Biology with Manipal institute of regenerative medicine** - The M.Sc. programme commenced in August 2013, at the Faculty of Medicine, University of Colombo. It is a two year course. The course is conducted in the Human Genetics Unit of the Faculty of Medicine, University of Colombo with faculty drawn from both the University of Colombo and the Manipal Institute of Regenerative Medicine. The first batch is expected to graduate in August 2015. The second batch to commence the course in August 2015 has already been selected. With the establishment of this course the first stem cell biology research team in Sri Lanka has been set up. It is hoped that this research team will produce new discoveries in the years to come.
- ❖ **Initiation of establishment of an antibody based vaccine development facility** - Initial research is being carried out at the Kothalawala Defence University targeting a vaccine for Dengue.
- ❖ **Research and Development work of Coloured Glazes** - This project was conducted to solve production problems of stoneware and glazes. It was successfully completed by Midaya Ceramics (Pvt) Ltd ; Homagama providing concrete solutions to two problems; i.e. Lemon peel effect when using Dark red glaze and Crystal formation when using Cobalt blue glaze.
- ❖ **Introduction of Sri Lankan skincare products to markets in Australia and New Zealand** - A new company - ‘Nature’s Creations NZ Ltd.’ was registered to open up channels to market “Nature’s Secrets Skincare Products - Made in Sri Lanka” in the New Zealand and Australian market.
- ❖ **Establishment of a Joint Research and Development venture on solar energy** - Three scientists from the Universities of Ruhuna, Jaffna and Peradeniya were trained at the Sivananthan Laboratory, USA on Research and Development of CdTe/CdS based solar cells. Further, two Workshops on the same subject were conducted at the National Institute of Fundamental Studies and the University of Ruhuna.
- ❖ **Institutional Capacity Building in Water Management and Climate Change adaptation in selected countries in Asia and Africa** - This project was inaugurated in January, 2014 with the collaboration of Prof. Harsha Ratnaweera, University of Life Sciences, Norway and the Universities of Peradeniya and Jaffna.

## International Collaborations

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

A Memorandum of Understanding (MoU) was prepared to be signed between the Pakistan Science Foundation and the NSF for the implementation of a programme which will provide an opportunity for local scientists and technologists to obtain expertise in their respective subjects and to establish collaborative activities in various fields of Science and Technology. Under the programme Pakistan will also support Sri Lanka in Popularization of Science among different sectors in the society.

## Workshop on 'Horizon 2020 Grants Scheme'

A Workshop was conducted to introduce the 'Horizon 2020 Grants Scheme' of the European Union to the Sri Lankan scientific community at the NSF Auditorium. Around 40 scientists from different Universities and Research organizations of Sri Lanka participated in the programme. Mr Denis Dambois, EU office in Delhi and Professor Dilanthi Amaratunga, University of Salford, UK spoke on following topics;

- Mr Denis Dambois- The Structure and goals of the Horizon 2020 programme : teaming for excellence as the key to unlock the European Research Area potential
- Professor Dilanthi Amaratunga- Pathways for Southern Asia via Horizon 2020 : opportunities for South Asian Institutions
- Professor Richard Haigh, University of Salford, UK- conducted hands on experience session at the end of the workshop to familiarize navigation of horizon 2020 web site.

Participants were requested to submit suitable project proposals for consideration of award of Grants.

## Annual TWAS/ NSF Prize for Young Scientists

The NSF in concord with the 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 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 the research work and to reward such attainments. Out of five applications received one nomination from the field of Biology was recommended to TWAS for their consideration for an award for the year 2014.

## The Overseas Travel Grants

The objective of this programme is to provide an opportunity to Sri Lankan scientists and technologists to present and share the research findings at International fora and to acquire knowledge and skills on new discoveries, achievements, and developments in their respective fields of research. It provides a good opportunity for them to get exposure at the global level and to establish links with scientists working in similar areas across the globe for future collaborative activities. In 2014, the NSF awarded fifty one (51) Overseas Travel Grants. Detailed information on the Travel grants given during the year is given in Annex 07.

### **Overseas Special Training Programme (OSTP)**

The objective of the Overseas Special Training Programme (OSTP) is to enhance national capacities of Sri Lankan scientists by providing training opportunities at centers of excellence abroad. Under the OSTP scientific and technical personnel such as full time research students, science administrators, science educators, S&T policy makers & science communicators are financially supported to acquire overseas training up to a period of 12 months. They are provided the opportunity to obtain advanced laboratory & research skills, industrial & technical experience and science communication & teaching skills that would not be available in Sri Lanka in the foreseeable future.

In 2014, the NSF awarded Seventeen (16) OSTP Grants and the details of those Grants awarded 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 in 2014. Prof. A.M. de Silva (University of North Carolina, School of Medicine) was invited as a resource person of the project on “Partnership to Produce Virology Reagents for Research and Biotechnology Applications in Sri Lanka” at General Sir John Kotelawala Defence University; Prof. A.P. De Silva and Prof. Shervanthi Homer were invited as speakers of the Theme Seminar -2014 of the SLAAS Annual Sessions. A grant was awarded to Coconut Research Institute (CRI) to obtain expertise from Prof. L.M. GAO (Chinese Academy of Sciences) at the “National Workshop on DNA Bar coding Applications and Field/Laboratory Protocols”, to be organized in 2014, but the workshop was postponed.

### **Man and the Biosphere Programme (MAB)**

NSF is the national focal point for UNESCO’s Man and the Biosphere Programme, and functions through the National MAB Committee that facilitates the nomination of Biosphere Reserves to the world network of Biosphere Reserves and National MAB Reserves. Activities pertaining to the year 2014 are mentioned below.

### **Periodic Reviews of International Biosphere Reserves of Sri Lanka**

Work on Periodic Review of the four International Biosphere Reserves (IBRs) in Sri Lanka, namely, Sinharaja, Bundala, Hurulu and Kanneliya, Dedyagala & Nakiyadeniya (KDN) Complex was completed and reports were submitted to UNESCO. UNESCO has approved to continue their IBRs status in Sri Lanka.

## **Nomination of Usangoda as a Geopark**

The Sub-Committee working on the nomination of Usangoda National park to be declared as a Geopark finalized the first draft of the nomination dossier for submission to UNESCO for their consideration. A field visit was made in August and schematic design for the proposed structures to be built at the Geo-park was prepared.

## **Human Monkey Conflict in Sri Lanka**

In recent years human- wildlife conflict has been identified as a major problem for agricultural development and human wellbeing in some areas of the country. It has also become a threat to biodiversity conservation. Among the varied reasons for escalation of monkey-human conflict are the loss of forest cover of Sri Lanka in the past, and the loss of forest quality in many of the smaller forests of the wet zone. In recent years, there is also increased loss of canopy cover outside forests due to fragmentation of home gardens and rubber lands. All these factors have combined over the years to reduce (a) areas (both natural and modified) where monkeys can live without conflict, and (b) trees that produce food for primates.

Taking these factors into consideration a workshop was organized on Human Monkey Conflict in Sri Lanka on 10th April, 2014. The recommendations made at the workshop would be forwarded to the Ministry of Environment and Renewable Energy to prepare an action plan.

KNOWLEDGE CREATION,  
COLLATION, PROCESSING  
AND SHARING



## Knowledge Creation, Collation, Processing and Sharing

The National Science Library and Resource Center (NSLRC) of the NSF continues to provide an efficient information dissemination service to the scientific community using information communication technologies through strengthening of linkages and networks, by carrying out necessary programmes to foster the interchange of scientific information among scientists in Sri Lanka and foreign countries; by serving as the National repository of Science & Technology Literature and by facilitating an efficient Science and Technology information services through training of library professionals, provision of technical assistance and software distribution. The following activities were conducted in 2014 to meet the above requirements.

**Highlights:** Following significant achievements were made during the year.

- ❖ **National Digitization Project (NDP)** : Phase two (II) of the National Digitization Project was commenced, covering scholarly literature collections of local origin in eleven (11) institutions in the country. A significant progress has been made completing over 75% of the projected work. The digitized materials of the phase I of the project are now maintained in e-repositories in each respective institution to be searched through a common interface.
- ❖ **Sri Lanka Journals Online Database (SLJOL)** : Following the hand over of the administrative responsibilities of the SLJOL database to NSLRC in July 2013, it has now become substantial and operates successfully publishing 59 journals of local origin. According to the usage statistics it is noted that worldwide visibility to the contents of the journals on SLJOL have tremendously increased.
- ❖ **Union List of Periodicals Database (ULIST)** : A web based search interface for the revised ULIST database was successfully developed. It serves as an online search tool enabling Sri Lanka scholars to have quick and easy location of journal holdings of 6623 journal titles in 55 major S&T libraries in the country.

- ❖ **Open Access Policy Templates** : NSF successfully developed two (02) Open Access Policy Templates that could be used across Funding organizations and Research institutes/universities with a view to promote innovation and achieving better and maximum returns to the public funds invested on research in Sri Lanka. It also aims towards providing wider dissemination to the findings of research enabling more recognition and more impact for Sri Lankan research.
- ❖ **E-Repository of publications arising out of NSF funded research** : A new e-Repository was established providing access to the full text of all research outputs of NSF funded research with a view to providing higher visibility and to be read, cited, applied and built upon by a wider community.

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

STMIS is a computerized information system developed and maintained by the NSF since 2004. The online search and registration is available on its web site: [www.nsf.mis.ac.lk](http://www.nsf.mis.ac.lk). The STMIS database contains information on scientists; S&T related institutions, advanced scientific equipment available in the country, information on S&T related services and training programmes, research publications and information on the ongoing research in the country.



The STMIS database is being updated regularly and by the end of 2014, the total number of scientists registered in the database was 5,324.

Identity Cards are also being issued to the registered scientists with concessions offered by various private institutions for their products and services such as hospital, hotels, airlines, bookshops etc.. Considering the structural and functional limitations of the current STMIS, a new system was being developed in 2014 under the IT Integration Project of NSF that will integrate the system with other NSF processes. Data capturing tools in the new system is being finalized and the work pertaining to data transfer from the previous system was being carried out. The system can be searched and online registration can be done through its web site: [www.mis.nsf.ac.lk](http://www.mis.nsf.ac.lk).

We promote publication of research in Science, Technology and Social Sciences, and global dissemination of local research findings and publish two journals.

## Towards dissemination and sharing of research knowledge.

NSF promotes publication of local research findings in the fields of Science, Technology and Social Sciences. Two peer reviewed journals are published and disseminated by the NSF globally.

### *Journal of the National Science Foundation of Sri Lanka (JNSF)*

The Journal of the National Science Foundation of Sri Lanka (JNSF) publishes the results of research in all aspects of Science and Technology since 1973. Four issues of the journal are published per year in March, June, September and December. Contents of the journal are peer reviewed and are currently indexed in Thomson Scientific Index (Science Citation Index-SCI), Chemical & Biological Abstracts, Biosis Previews, Zoological Records and SCOPUS database. The journal is published both online and in print form.

During 2014, all four (04) issues of JNSF volume 42 (issues 1,2,3,4) were published on time. The Journal has a wide circulation both locally and overseas and the full text of JNSF can be accessed through the Sri Lanka Journals Online (SLJOL) web site <http://www.sljol.info/index.php/JNSFSL/index> free of charge. Online publication of the journals has given very high visibility to its contents. Usage statistics provide information on high numbers of views and downloads of papers at the global level.

### *Sri Lanka Journal of Social Sciences (SLJSS)*

The Sri Lanka Journal of Social Sciences (SLJSS) is published twice a year in June and December. The journal publishes articles in Sinhala, Tamil and English languages covering the entire range of Social Sciences, focusing on Sri Lanka and other South Asian countries.

All papers are peer-reviewed. The full text of the Journal articles are accessible through the Sri Lanka Journals Online (SLJOL) web site, <http://www.sljol.info/index.php/SLJSS>. The status of the Journal publication during 2014 was as follows.

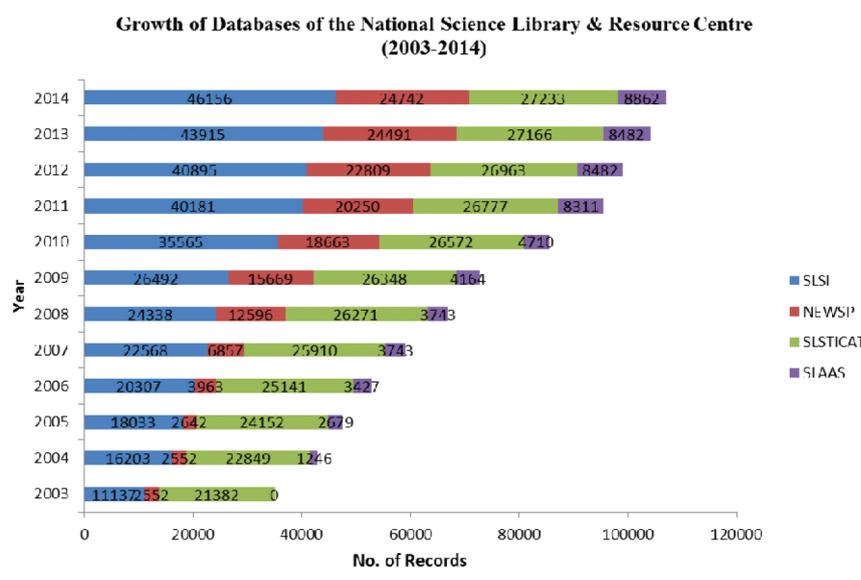
- 1) ***Volume 35/36 Nos. 1 & 2 – Published  
June/Dec (2012/2013).***
- 2) ***Volume 37 2014 1 & 2  
June /December 2014 - Being processed***

## 3.0 Strengthen the National Science Library & Resource Centre to become a Centre of Excellence

### National Level Databases available at NSLRC

The NSLRC by mandate maintains several national level databases to cater to Sri Lankan researchers and the academia to access information on current and past researches conducted in the country. All databases progressed well during the year under review.

❖ ***Sri Lanka Science Index Databases (SLSI)*** : SLSI database currently accommodates over 46100 documents of which online access is provided to the full text over 90% of the items. 2918 records were added to the database during the year. The progress of SLSI database was severely affected due to the technical problems experienced in the local area network. Frequent problems were also observed in the database since



the WINISI) software on which SLSI database is maintained has not been updated continuously to comply with the speedy hardware and software development of the present day. Hence steps were taken to accelerate the batch transfer of the contents in the conventional SLSI database to the state of the art digital repository (National e-repository) on D-space software.

❖ **Research Grants Database (RGRA) :** The database was updated with the incorporation of information on 24 final reports and post graduate theses received during the year resulting from NSF funded projects.

❖ **SLASS Database :** The SLAAS database has shown significant improvement. SLASS database was completely transferred to a new open source software JISIS in order to overcome the problems encountered with WINISIS. The database includes complete references and abstracts to all papers presented at SLAAS annual sessions during the period 1976 -2013. The total number of records added during the year was 697 and the total number of records of the database as at 31st December 2014 was 8862. The database can be searched and abstracts can be downloaded/ printed on line.

### Collection Development: National e-repository

It is extremely important to provide the best possible services to the local scientific community by using the latest information dissemination technologies. Accordingly, transferring the contents in the conventional SLSI databases to the National e-repository launched in 2009 on D-space software was further continued. Total number of items transferred during the year from SLSI to national e-repository was 4456 and the number of full text of local scholarly journals accessible through the national e-repository was 23. One new community on ‘research publications arising from research grants funded by NSF’ was incorporated accommodating 1090 Final Reports and 304 Theses. The total number of items recorded in the National e-repository as at 31st December 2014 was 9695.

### Collections Development – Reference Collection, Special subject collections

79 new books were added to the collection to cater to the reference requirement of the scholarly community. The new additions covered a set of books on ‘Sri Lankan indigenous knowledge’ and science fiction. The centre continued to receive copies of new issues (over 68 titles) of scholarly journals published within the country. Number of foreign journal titles subscribed was 7.

## Collection Development strengthening access to global literature

During the year access to the following international databases, a prime requirement of the research community was enabled within the NSF premises. The databases were utilized by academic and researchers for literature searches and for citation information on their publication.

- ❖ **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.

## Strengthening access to information in local libraries

### National Digitization Project (NDP)

The objective of the National Digitization Project is to digitize local S&T literature available in research & academic libraries in the country to facilitate easy & quick online access to the full text through a national network of Institutional repositories. Phase I of the project which covered eight (8) institutions in the country was completed in 2013. Uploading the digitized documents in to the respective Institutional Repositories have been completed in five (5) libraries namely, Rubber Research Institute (RRI) and the Hector Kobbekaduwa Research & Training Institute (HARTI), University of Moratuwa (UM), Industrial Technology Institute (ITI) and the Council for Agricultural Research policy (CARP). Uploading of documents in the Coconut Research Institute (CRI) and the Central Environment Authority (CEA) has shown significant progress while Post Graduate Institute of Agriculture (PGIA) commenced uploading documents.

Phase II of the project covering the collections of the following institutions was commenced and the total number of pages digitized during the year were 442093. (55.25% of the total documents) The progress made in each library is as follows.

- ❖ 100% digitization has been achieved in South Eastern University (SEU), Mahaweli Authority and National Science Foundation (additions during 2010-2014).
  - ❖ Significant progress is made in Geological Survey & Mines Bureau (GSMB) – 90%, Department of Census & Statistics (DCS) - 80% , National Library - 58%, and Department of Irrigation – 85%
  - ❖ Digitization work in University of Peradeniya (UP), Tea Research Institute (TRI) and Institute of Fundamental Studies (IFS) will commence in 2015.
- **Promote and support the development of 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.

Virtual Servers were developed within the NSF server for the following institutions to maintain their institutional repositories (IRs) enabling effective participation in the National Institutional Repository network.

- Sri Lanka Council for Agricultural Research Policy
- Post graduate Institute of Agriculture
- Geological Survey & Mines Bureau
- Department of Censes & Statistics
- National Library & Documentation Services Board
- Tea Research Institute
- Faculty of Medicine -University of Kelaniya

The rapid growth of the contents in IRs was significant. Total number of full text documents added to all other institutions' IRs as at 31st December 2014 was 10533.

## Information Services

### Literature searches, document supply services and reference services 714,636

NSLRC 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.

Total number of users who made literature searches on Scop us Citation & Abstracting databases was 37 and total number of abstracts downloaded from Scop us was 2796. The total number of searches made on local databases maintained by the NSLRC on international full text databases namely (HINARI, TEEAL,

AGORA, and ARDI) was 714 and number of full text articles provided to users was 636. 277 users who visited NSLRC were successfully catered during the year. In addition, 88 inquiries made over the phone and through e-mails were fulfilled.

### 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 ten (10). The objective of CAS was to keep the scholars aware of latest research findings within their scope of research.

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

#### Capacity building

In order to provide necessary knowledge and training on the maintenance of Institutional Repositories, following activities were done to the library professionals of the participating institutions of the National Digitization project.

#### ❖ *Workshop on D-Space software for developing Institutional Repositories*

A workshop was organized from 18th – 19th March 2014 for 17 librarians to provide necessary knowledge and train on data entry in D-Space Software. Another follow up training was conducted in September 2014 & October 2014 for seven (07) Data entry operators working in the same project.

#### ❖ *Technical assistance*

Technical assistance was provided on 45 occasions to the libraries of the participating institutions of NDP and the libraries which use WINISIS as the software for library automation.

### Awareness Programme on Open Access (OA) to Research Information

During the year under review steps were taken to conduct following workshops with a view to promote awareness on OA concept among the library professionals and research community in Sri Lanka.

#### ➤ **Seminars/Workshops: Seven (08) Workshops were conducted at the following Institutions**

- University of Moratuwa
- Industrial Technology Institute
- Coconut Research Institute
- Hector Kobbekaduwa Agrarian Research & Training Institute
- Rubber Research Institute
- National Library & Documentation Services Board
- University of Peradeniya

- Under the Co-ordination of NSLRC, a presentation was delivered on the importance of the concept of open access to research information by Ms. Heather Joseph, Executive Direct, Scholarly publishing and Academic Resources Coalition (SPARC) at the “Theme Seminar” and Technical Sessions of 2014 SLAAS annual sessions. A seminar was organized on the same subject at the University of Peradeniya where over 100 academia and researchers attended.

➤ **SLSTINET Seminars**

Two seminars were organized during the year with the objective to keep library and information professionals abreast at the new developments in the field of information dissemination.

- ❖ Open Access to Research Information: awareness raising – 18th February 2014 (NSF Auditorium)  
No. of participants attended was 54
- ❖ Indigenous knowledge for National Development : role of the Library 25th July 2014 (NSF Auditorium)  
No of participants attended was 46



# SUSTAINABLE UTILIZATION OF NATURAL RESOURCES



## **Sustainable Utilization of Natural Resources**

The NSF is the national focal point for UNESCO's Man and the Biosphere Programme, and it functions through the National MAB Committee. The nomination of Biosphere Reserves to the world network of Biosphere Reserves and to the National MAB Reserves are facilitated through this committee. Activities pertaining to the year 2014 are mentioned below.

### **Periodic Reviews of International Biosphere Reserves of Sri Lanka**

Work on Periodic Review of the four International Biosphere Reserves (IBRs) in Sri Lanka, namely, Sinharaja, Bundala, Hurulu and Nakiyadeniya complex was completed and reports were submitted to UNESCO. Recommendation of the UNESCO was of tasted for certificated management for re science in the status & IBRS

Obtained recommendations for successful management of 4 international biosphere (IBRs) reserves through the periodic review process and avoid de-listing of the IBRs in Sri Lanka.

### **Nomination of Ussangoda as a Geopark**

The Sub-Committee working on the nomination finalized the nomination dossier for submission to UNESCO to be considered for nomination as a Geopark. A field visit was made in August and a schematic design for the proposed structures that would be built at the Geo-park was prepared.

### **Human Monkey Conflict in Sri Lanka**

A workshop was held on Human Monkey Conflict in Sri Lanka on the 10th April 2014. The recommendations would be forwarded to the Ministry of Environment and Renewable Energy to prepare an action plan.

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. During 2014, effort were made to develop the skills and productivity of our staff to maintain a result oriented open culture, which helped to uplift the employee contribution effectively to achieve the mission of the NSF. Supporting Divisions liaise with the Scientific Divisions in executing their core functions for the smooth flow and sustainability 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 discharged the following key activities; during the year under review.

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

The NSF has a staff strength of 125 members including 29 Scientific Officers. A list of the principal staff as at 31.12.2014 is given in Annex 13.

During the year 2014, ten (10) new staff members were recruited, twelve (12) members resigned and One (01) member retired.

### Staff Training

Based on the 'Training gap analysis' carried out in 2013, a 'Staff Training Plan' including both local and foreign training for 2014 was developed and implemented to build a competent, skilled and efficient staff. Although all training requirement as stipulated in the plan could not be fulfilled the training opportunities provided during 2014 showed significant progress when compared to 2013.

A large number of employees at all levels (Academic & Research; Junior Manage and above categories; Management assistants including PL grades) were trained to improve their knowledge and skills as appropriate. The total number of training programmes provided at individual levels was 27 while 08 programmes were provided for groups spanning over a number of fields such as Time Management, Presentation Skills, Procurement Procedures, Filing Systems Management etc. The PL. grades were provided basic training on computer skills.

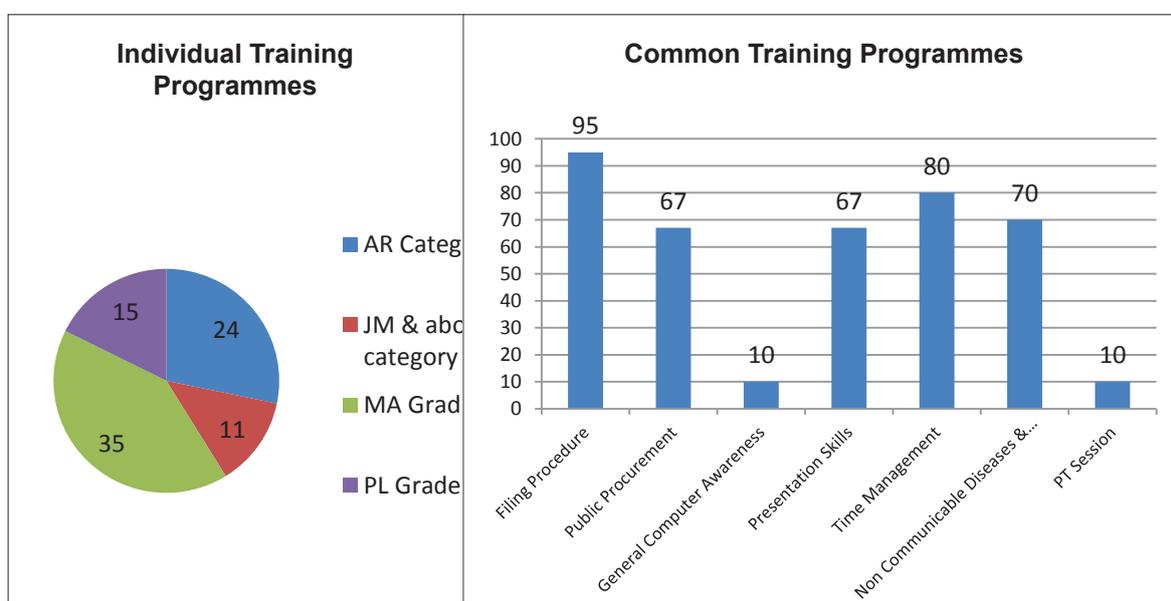
The graphs below show the level of training given for different categories of employees and numbers trained in different subject categories. The highest number of opportunities have been provided to Management Assistants grade (35) followed by Academic & Research Categories (24), PL grade (15) and JM and Above Grades (11). Two employees were able obtain Diploma level Training.

The main constraints identified in relation to fulfill training requirements were the unavailability of sufficient funds and unavailability of suitable programmes locally.

The Staff Development Committee (SDC) is responsible for providing required training opportunities to the staff to enhance their job - related knowledge and skills in order to develop the individual effectiveness and there make a significant contribution to the work of the respective Divisions finally to the NSF.

The staff represented the NSF at 38 local and 11 foreign meetings / workshops / Seminars. The details are annexed. (Annexes 10 & 11)

Some National and Institutional Committees were also represented by the NSF Staff.



## 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 institute, within the prevailing Financial Regulations. Following activities were performed during the year with up to date information.

- ❖ Maintenance of Books of Accounts, Fixed Asset Register, General Ledger, Grant Ledger, Stock books etc.
- ❖ Preparation of all financial reports including annual financial statements, estimates, and submitting to the relevant authorities on due dates.
- ❖ Setting payments in relation to all activities conducted by the divisions of the Institution.
- ❖ General payments such as salaries, overtime etc.
- ❖ Maintenance of the stores.

- ❖ Maintenance of stocks of NSF publications.
- ❖ Sale of NSF publications at exhibitions, book fairs and various workshops organized by NSF.
- ❖ Liaise with the Finance Ministry and line Ministry Officials for obtaining funds for the Institution.

The integrated online system for maintaining financial information showed slow progresses.

### **Printing Unit**

The Printing Unit continued to support the activities and printing requirements of all the Divisions of the NSF. 16 publications, namely books, Magazine and 78 other printing works were printed during the year.

### **Information Technology Unit**

The ICT Unit is responsible to maintain and improve the ICT infrastructure facilities to support successful discharging of NSF activities and provide the end-user IT supports to NSF Staff.

During 2014, the ICT Unit upgraded ICT facilities to improve the work performance of the organizational business process. Upgrading of Internet bandwidth from 2mbps to 15mbps, upgrading of local area network to introduce VLANs and improving the security system through the incorporation of a sophisticated firewall could be highlighted as key activities performed. Computer requirements of the staff were fulfilled through the installation of 38 new computers and upgrading facilities in the training centre, a long standing need through the installation of ten (10) new computers, Fourteen (14) outdated computers were discarded.

The progress of integrated online Software Solutions by the University of Colombo School of Computing (UCSC) was also monitored by the ICT Unit. The progress was observed to be very slow.

### **Internal Audit Unit**

During the year 2014, four (04) Audit & Management Committee Meetings were conducted. The physical & financial progress of the divisional activities as per the Action plan of the year were continually reviewed, gaps were identified and suitable suggestions and recommendations were made to the management to improve the work output and the efficiency. Improvements to the Divisional Inventory Registers were also suggested and the assets recording system was streamlined.

### **Competent scientific administrative, technical and support staff**

An Out Bound Programme was held at Special Force Training School, Sri Lanka Army, Maduru Oya mainly to build up leadership and team spirit of the staff.

### **Quality management System (QMS)**

The progress of QMS showed very slow progress due to priority given to other scientific activities in the Institution. Most of the Document work however was nearly complete. Standard Operational Procedures (SOPs) were revised at divisional level and uploaded to the QMS gateway. Main aim is to standardize all the tasks, procedures, processes of NSF in order to give a quality and timely service to its stakeholders. A Gateway was developed through which all documents (both internal and external) and records of the system could be accessed online.

### **Balanced Score Card**

This is to identify and establish quarterly targets (quantitative) in relation to key business processes of the organization in accordance with Annual Activity Plan. The prime objective of the BSC is to direct HR, financial and other resources in a well focused manner within the mandate so that performance of the organization can be measured covering aspects like customer satisfaction, internal processes, employee performance and financial aspects in a balanced manner. Key Performance Indicators (KPIs) were defined and progress was monitored and measured at individual and organizational level. Targets achieved against set targets for the year were satisfactory.



# FINANCIAL STATEMENTS

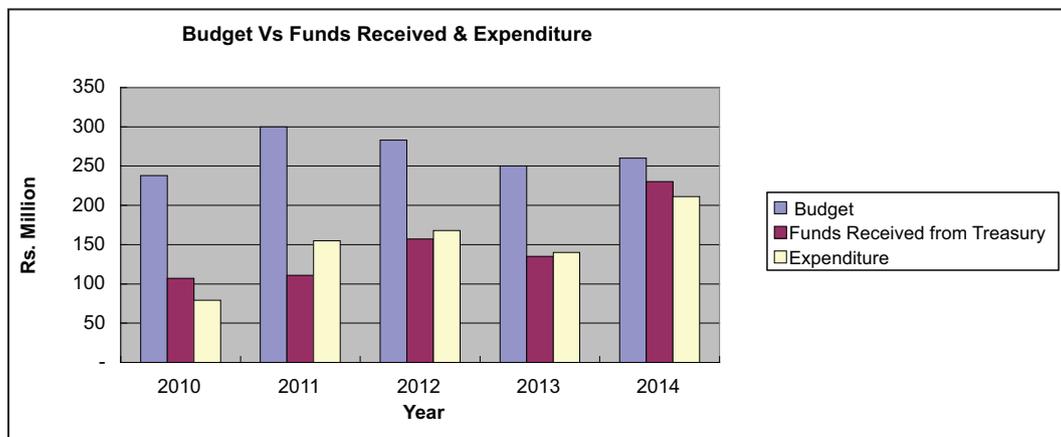


### Observations of the Accounting Officer on Performance 2014

NSF is a funding organization which is solely dependent on government funds. Amount of funds recommended by the Department of National Budget to be released for 'Recurrent' and 'Capital' expenditure for the NSF for the year 2015 were Rs. 107 Mn and Rs. 247 respectively. Accordingly Rs. 107,555,000 and Rs. 230,776,510 were released by the Department of Treasury operations for Recurrent and Capital Expenditure. In addition NSF received an amount of Rs. 6,173,234 from the International Development Research Centre (IDRC) to develop a regulatory framework for Nanotechnology related activities in Sri Lanka.

	Estimate (Rs.'000)	Funds received from the treasury (Rs.'000)	Expenditure (Rs.'000)
<b>Recurrent Expenditure</b>			
Personal Emoluments	81,400	107,555	66,717
Other Recurrent Expenditure	33,600		27,420
<b>Total</b>	<b>115,000</b>		<b>94,137</b>
<b>Capital Expenditure</b>			
Object Code – 133-02-05-3-2201	260,000	230,776	217,870
IDRC (Foreign Funds)		6,173	
Revenue	387		

The following graph provides information on the annual Expenditure against the Funds received during 2010 -2014



Details of the Capital Expenditure of main Divisions in 2015

### Details of Capital Expenditure of main division as against the funds received during the year

Description	Rs.000' Expenditure 2014
1. Grants for Research & Other Scientific Work	117,290
2. Science & Technology Policy Research Division	4,120
3. Technology Division	24,927
4. National Science Library & Resource Centre	9,057
5. Science Popularization Division	25,132
6. International Liasion Division	14,931
7. Informatin Technology Division	1,587
8. Office Furniture Fittings & Equipment	8,636
9. Rehabilitation of Capital Assets	-
10. Director's Office Vote	7,771
11. Overseas Special Training Programme	3,971
<b>TOTAL</b>	<b>217,870</b>

### Management Issues

The non release of funds allocated for each quarter of the year on a timely regular basis remained a constraint throughout the year and this adversely affected on achieving set targets and the completion of activities scheduled in the Action Plan for the year. The beneficiaries of research grants are basically those in academic and research institutes and NSF has no direct control over them. Research is carried out under the supervision of the respective Heads of departments of the respective research institutes. In spite of the strong grants scheme conditions in force, timely implementation of projects is adversely affected to some extent due to procedures and systems within grantees' institutions. However with appropriate management approaches in place, NSF achieved significant success over the programmes scheduled, recording 84% capital expenditure of the total allocation for the year. This is a significant achievement when compared to the previous years.

## Financial Statements

### STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31<sup>ST</sup> DECEMBER 2014

				Rs.000
<b>Revenue</b>	<b>2014</b>		<b>2013</b>	
Government Grant	107,555		84,661	
<b>Other Income</b>				
Interest received	234		231	
Sundry Income	147		42	
Profit/(Loss) Sale of Publications	(2,192)		(3,490)	
Photocopy receipts	4		3	
NSLRC Income	1		26	
Exchange Gain/(Loss)	21		108	
<b>Expenditure</b>				
<b>Personal Emoluments</b>				
Salaries & allowances	54,674		49,248	
Employees Provident Fund	6,724		6,175	
Employees Trust Fund	1,343		1,236	
Provision for retiring gratuity	2,297		2,401	
Overtime	830		790	
Holiday payment	49		51	
Uniforms	250		213	
Staff training	550		282	
	<b>66,718</b>		<b>60,396</b>	
Travelling	434		196	
Supplies	4,013		3,423	
Maintenance	2,512		4,629	
Contractual Service	9,449		9,161	
Others	11,011		6,986	
Depreciation	13,550		12,401	
	<b>40,970</b>	107,687	<b>36,796</b>	97,192
Surplus Deficit over the income				
before extraordinary items		9,479		(4,401)
Extraordinary items (Net Profit or loss)		-		-
<b>Net Surplus/ (Deficit) for the period</b>		<b>9,479</b>		<b>(4,401)</b>

## Statement of Financial Position as at 31<sup>st</sup> December 2014

Rs.'000

	2014	2013	2012	
<b>ASSETS</b>				
<b>Non Current Assets</b>				
Property Plant and Equipment	<u>446,997</u>	<u>451,912</u>	<u>445,069</u>	
	446,997	451,912	445,069	442,743
Investments	632,000	632,000	632,000	661,522
<b>Current Assets</b>				
Inventories/ Stock	1,509	2,910	4,263	
Trade and other receivables	18,706	14,596	13,913	
Prepayments	3,451	811	661	
Cash and cash equivalents	<u>17,929</u>	<u>8,808</u>	<u>12,481</u>	
	41,595	27,125	31,318	35,717
<b>Total assets</b>	<b><u>1,120,592</u></b>	<b>1,111,037</b>	<b><u>1,108,387</u></b>	<b><u>1,139,982</u></b>
<b>Net assets &amp; Liabilities</b>				
<b>Capital and Reserves</b>				
Accumulated Fund	(5,794)	(18,163)	(8,819)	
Revaluation Reserve	422,549	422,549	422,549	
Government Grant	<u>632,000</u>	<u>632,000</u>	<u>632,000</u>	
	1,048,755	1,036,386	1,045,730	1,090,327
<b>Non current liabilities</b>				
Provision for gratuity	21,413	20,526	23,085	
Differed revenue	<u>38,040</u>	<u>28,378</u>	<u>27,539</u>	
	59,454	48,904	50,624	40,252
<b>Current liabilities</b>				
Payables	2,097	4,417	2,764	
Accured Expenses	<u>10,286</u>	<u>21,330</u>	<u>9,269</u>	
	12,383	25,747	12,033	9,403
	<b><u>1,120,592</u></b>	<b>1,111,037</b>	<b><u>1,108,387</u></b>	<b><u>1,139,982</u></b>

## Statement of Cash Flow

	Rs'000	
	2014	2013
<b>Cash flows from operating Activities</b>		
Net excess of expenditure over income	9,479	(4,401)
Add; NSF fund prior year adjustments	<b>(12,397)</b>	<b>(1,178)</b>
	(2,918)	(5,579)
<b>Adjustments for</b>		
Depreciation	(13,550)	(12,401)
Loss from publications	(2,192)	(3,490)
Gratuity paid during the year	1,410	4,960
Provision for Gratuity	(2,297)	(2,401)
Exchange Gain/(Loss)	21	108
Deffered Revenue	11,396	11,210
Stock of Magazines & Journals written off	(898)	(182)
Operating profit/loss before working capital changes	<b>3,192</b>	<b>(3,383)</b>
Net increase/decrease in trade other receivables	(6,750)	(833)
Net increase/decrease in inventories	1,402	1,353
Net decrease/increase in trade payables	(13,364)	13,714
Cash generated from operations	(18,712)	14,234
Net cash from operating activities	<b>(15,520)</b>	<b>10,851</b>
<b>Cash flows from Investing Activities</b>		
Outflow from activities	(203,105)	(134,111)
Purchase of assets	(8,636)	(19,244)
Proceeds from sale of books	166	133
Net cash used in investing activities	<b>(211,575)</b>	<b>(153,222)</b>
<b>Cash Flows from Financial Activities</b>		
Contribution from Government	230,777	135,115
Foreign Aid	5,439	3,583
	<b>236,216</b>	<b>138,698</b>
Net cash from financing activities	9,121	(3,673)
Cash & cash equivalent at beginning period	8,808	12,481
<b>Cash &amp; cash equivalent at end of period</b>	<b>17,929</b>	<b>8,808</b>

## 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 differed 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

	2014	2013
	Rs.	Rs.
1 NSLRC Equipment	-	186,368.00
2 NSLRC Books	83,564.75	102,998.00
3 National Digitization Project	5,902,355.31	3,878,904.38
4 NSLRC staff training	84,342.65	7,000.00
5 International Database	2,748,429.43	2,597,123.89
6 NSLRC workshops & Seminars	-	(34,963.02)
7 Union List Data Base	8,525.00	90,757.26
8 National Repository S & T Literature	83,157.00	-
9 Seminars Workshops & Other Support to Library	104,920.00	400,472.97
10 Prepare promotional Materials	-	13,166.98
11 S & T Libraries in Sri Lanka	8,755.05	-
12 Open Access to Research Information	32,582.97	-
	<b>9,056,632.16</b>	<b>7,241,828.46</b>

### 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 to the Institution where the grantee is employed in installments. 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 remain unutilized funds, we create a debtor.

	2014	2013
	Rs.	Rs.
Research Grants & Other Scientific work expenditure	107,481,063.82	60,777,254.90
Research Scholarships & Fellowships	9,809,383.80	8,705,139.22
Actual expenditure for the year	117,290,447.62	69,482,394.12
Accrued expenditure	447,932.92	1,037,413.45
	<b>117,738,380.54</b>	<b>70,519,807.57</b>

### 1.3 Miscellaneous Fund Expenditure

	2014	2013
	Rs.	Rs.
1 International contacts	11,866,910.58	8,273,139.32
2 Science Popularization Division	25,127,304.82	13,247,995.35
3 Information Technology Unit	1,586,985.00	5,673,574.19
4 Rehabilitation & Improvements for assets	-	161,501.76
5 Director's Office Vote	7,771,395.71	1,118,659.53
6 Science & Technology Policy Research Division	4,120,061.80	2,312,689.99
7 Technology Division	24,926,555.10	24,463,161.95
8 International Liasion Division	3,063,636.86	2,721,985.21
9 Global Forum Follow UP	840.00	3,360.00
10 IDRC NSF Expenditure	-	5,328.00
11 International Contacts OSTP	3,970,982.86	4,164,686.23
12 National Science Centre	4,483.61	-
	<u>82,439,156.34</u>	<u>62,146,081.53</u>

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

Depreciation has been provided on 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 Debtors

	2014	2013
	Rs.	Rs.
Total debtors	15,298,909.50	10,454,771.54
Less: Provision for doubtful debts	-	-
	<u>15,298,909.50</u>	<u>10,454,771.54</u>

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

#### 4 **Liabilities**

##### **Creditors**

Creditors amounting to Rs. 2,097,206.92 represents monies held by NSF as given below,

	<b>2014</b>	<b>2013</b>
	Rs.	Rs.
1 SIDA/RFC A/c	11,719.58	11,618.17
2 SIDA	608.05	608.05
3 Sundry Creditors	752,846.66	752,846.66
4 Staff Creditors	5,870.19	5,189.32
5 Research Project on Energy	24,476.05	24,476.05
6 UNESCO Participation Programme	(134,886.64)	2,185,785.70
7 Stephan Workshop	1,436,573.03	1,436,573.03
	<b><u>2,097,206.92</u></b>	<b><u>4,417,096.98</u></b>

#### 5 (a) **Publications**

These are published mainly to disseminate Scientific Knowledge to school children in particular & 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 effected 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 & 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) **Net Profit/(Loss) Sale of Publications**

	<b>2014</b>
	<b>Rs.</b>
1 Other Publications	2,317.50
2 Sri Lanka Journal of Social Sciences	600.00
3 Sri Lanka Journal of Social Sciences Vol 31-32	1,000.00
4 Sri Lanka Journal of Social Sciences Vol 33-34	1,200.00
5 Sri Lanka Journal of Social Sciences Vol 35-36	(67,505.04)
6 Vidurawa	200.00
7 Natural Resources	4,500.00
8 Waders of Sri Lanka	1,200.00
9 Lankawe Swabhavika Vipath	(1,699.76)
10 Sustainable Agriculture	2,347.92
11 Medicinal Plants used in Sri Lanka	(17,032.00)
12 Ritipanna	(1,649.88)
13 Sri Lanka Medicinal Plants & Monographs	(45,560.00)

14	Atoms for Peace	(12,807.85)
15	Guide to Research & Scientific Institutions	(66,571.93)
16	Alternative Energy	(4,863.18)
17	Ecosystems Based Indigenous Water Management	3,194.00
18	Ground Water Conditions in Sri Lanka	3,000.00
19	Infant & Young Child Nutrition	(5,181.60)
20	Tradition & Livelyhood	(5,950.00)
21	Sri Lanka Science & Technology Innovation Statistical Indicator 2008	205.00
22	Some Elementry Hints	150.00
23	Kadukaraya saha Nayayam	(2,348.30)
24	Vidurawa - Vol. 28 - 1 (E)	300.00
25	Vidurawa Vol. 28-2 (E)	100.00
26	Vidurawa Vol. 28-2 (S)	100.00
27	Zoonotic Diseases in Sri Lanka	1,682.04
28	Statistical Hand Book 2004	3,800.00
29	Statistical Hand Book 2006	(1,768.00)
30	JNSF Vol. 40	50,886.80
31	JNSF Vol. 41	(5,457.90)
32	JNSF Vol. 42	(487,973.22)
33	Vidurawa Vol. 29 Special (S)	(900.00)
34	Vidurawa Vol. 29 Special (T)	(850.00)
35	Vidurawa Vol. 30-1 (S)	(10,700.00)
36	Vidurawa Vol. 30-1 (E)	(21,100.00)
37	Vidurawa Vol. 30-1 (T)	(58,200.00)
38	Vidurawa Vol. 30-2 (E)	(116,100.00)
39	Vidurawa Vol. 30-2 (S)	(147,900.00)
40	Vidurawa Vol. 30-2 (T)	(42,150.74)
41	Vidurawa Vol. 30 Special (E)	(154,237.42)
42	Vidurawa Vol. 30 Special (S)	(107,168.27)
43	Vidurawa Vol. 30 Special (T)	(58,370.47)
44	Vidurawa Vol. 31-1 (S)	(185,103.58)
45	Vidurawa Vol. 31-1 (E)	(138,010.63)
46	Vidurawa Vol. 31-1 (T)	(133,893.06)
47	Vidurawa Vol. 31-2 (S)	(155,404.97)
48	Vidurawa Vol. 31-2 (E)	(139,463.70)
49	Vidurawa Vol. 31 Special (S)	100.00
50	Vidurawa Vol. 31 Special (E)	100.00
51	Vidurawa Vol. 31 Special (T)	(70,934.96)
52	MAB Checkliast & Hand Book - 24	(180.46)
53	MAB Checkliast & Hand Book - 25	(2,073.73)
		<b>(2,192,127.39)</b>

5.1	<b><u>National Committee Expenditure</u></b>	<b>2014</b>
		<b>Rs.</b>
1	National Committee on the MAB Programme	186,814.18
2	National Committee on Social Sciences	40,000.00
3	Editorial Board of JNSF	179,633.75
		<b><u>406,447.93</u></b>

5.2	<b><u>National Science Library &amp; Resource Centre</u></b>	<b>2013</b>	<b>2012</b>
		Rs.	Rs.
1	Maintenance & Repairs	36,530.41	39,836.71
2	Periodicals Local & Foreign	848,988.30	749,460.66
3	Consumables	54,792.00	52,654.00
4	Document delivery services	7,595.85	1,989.00
		<b><u>947,906.56</u></b>	<b><u>843,940.37</u></b>

5.3	<b><u>Printing Unit</u></b>	<b>2014</b>	<b>2013</b>
		Rs.	Rs.
1	Consumables & Chemicals	762,418.12	601,335.05
2	Paper & Boards	112,896.01	6,001.09
3	Maintenance & Repairs	299,846.80	189,928.52
		<b><u>1,175,160.93</u></b>	<b><u>797,264.66</u></b>

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.

	<b>Rs. cts</b>
Amount paid for the year	1,409,905.00
Provision for the year	<b><u>2,297,022.58</u></b>

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

10 NSF owns 07 vehicles.

11 **Funds Drawn from the Treasury during - 2014**

		Rs.	
Consolidated Funds	Rs.	230,776,510.00	
Recurrent Funds	Rs.	107,555,000.00	
Foreign Aid- IDRC	Rs.	5,439,463.95	
Treasury Deposit	Rs.	733,771.87	(IDRC)

**Funds drawn from the Treasury from 1968 to 2014**

		Rs.
Consolidated funds	Rs.	1,637,547,139.45
Foreign Aids	Rs.	345,081,785.42

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

**1 Documentation Unit Capital Fund**

	2014	2013
	Rs.	Rs.
Balance as at 01.01.2014	721,951.42	2,962,279.88
Add: Prior year adjustments	-	1,500.00
	<u>721,951.42</u>	<u>2,963,779.88</u>

**2 Research Grant Fund**

Balance as at 01.01.2014	993,889.91	2,983,302.73
Add: Prior year adjustments	5,969,955.49	5,530,394.75
	<u>6,963,845.40</u>	<u>8,513,697.48</u>

**3 Man & the Biosphere Fund**

Balance as at 01.01.2014	1,829,977.19	1,829,977.19
Less; Net prior year adjustments	-	-
	<u>1,829,977.19</u>	<u>1,829,977.19</u>

**4 Miscellaneous Fund**

Balance as at 01.01.2014	918,191.01	1,120,436.24
Less: Net Prior year Adjustment	269,539.68	1,338,824.56
	<u>648,651.33</u>	<u>(218,388.32)</u>

**5 Scientific Reserve Fund**

Balance as at 01.01.2014	6,747,380.02	6,747,380.02
Add: Net prior year adjustments	-	
	<hr/>	<hr/>
	6,747,380.02	6,747,380.02
	<hr/>	<hr/>

**6 Foreign Aid**

Balance as at 01.01.2014	8,701,918.97	8,034,907.10
Add: Net Prior Year Adjustments	120,000.00	-
	<hr/>	<hr/>
	8,821,918.97	8,034,907.10
	<hr/>	<hr/>

**7 NSF Fund**

Balance as at 01.01.2014	(38,076,800.00)	(32,497,950.37)
Add: Net Prior Year Adjustments	(12,397,343.96)	(1,177,634.08)
	<hr/>	<hr/>
	(50,474,143.96)	(33,675,584.45)
	<hr/>	<hr/>

***Note***

During the year Rs. 10,207,537.99 is paid to Employees Provident fund for the EPF arrears to be paid on Cost of Living allowance from January 2006 to March 2012 as demanded by the Department of Labour and Rs. 1,224,904.15 for the Employees Trust Fund Board for the Cost of Living allowance from January 2006 to March 2012 as demanded by the Employees Trust Fund.



# REPORT OF THE AUDITOR GENERAL



**විගණකාධිපති දෙපාර්තමේන්තුව**  
**கணக்காய்வாளர் தலைமை அ்திபதி திணைக்களம்**  
**AUDITOR GENERAL'S DEPARTMENT**



මගේ අංකය } LS2/F/NSF/01/14  
 எனது இல. }  
 My No. }

ඔබේ අංකය }  
 உமது இல. }  
 Your No. }

දිනය } 13 July 2015  
 திகதி }  
 Date }

The Chairman,

National Science Foundation.

Report of the Auditor General on the Financial Statements of the National Science Foundation for the year ended 31 December 2014 in terms of Section 14 (2) (c) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the National Science Foundation for the year ended 31 December 2014 comprising the statement of financial position as at 31 December 2014 and the statement of comprehensive income, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 13 (1) of the Finance Act, No. 38 of 1971 and Section 40 of the Science and Technology Development Act, No. 11 of 1994. My comments and observations which I consider should be published with the Annual Report of the Council in terms of Section 14 (2) (c) of the Finance Act appear in this report. A detailed report in terms of Section 13 (7) (a) of the Finance Act was issued to the Chairman of the Foundation on 10 April 2015.

1.2 Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements, whether due to fraud or error.

1.3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Standards of Supreme Audit Institutions (ISSAI 1000-1810) that are in line with Sri Lanka Auditing Standards. Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

අංක 306/72, පොල්දූව පාර, බත්තරමුල්ල, ශ්‍රී ලංකාව, . - இல. 306/72, பொல்தூவ வீதி, பத்தரமுல்லை, இலங்கை. - No. 306/72, Polduwa Road, Battaramulla, Sri Lanka

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An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatements of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Foundation's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control of the Foundation. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements. Sub - sections (3) and (4) of Section 13 of the Finance Act, No. 38 of 1971 give discretionary power to the Auditor General to determine the scope and the extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion

#### 1.4 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report

### 2 Financial Statements

#### 2.1 Qualified Opinion

In my opinion, except for the effects of the matters described in paragraph 2:2 of this report, the financial statements give a true and fair view of the financial position of the National Science Foundation as at 31 December 2014 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

#### 2.2 Comments on the Financial Statements

##### 2.2.1 Sri Lanka Public Sector Accounting Standards

All assets and liabilities had not been stated in sequence of liquidity in the statement of financial position in terms of Sri Lanka Public Sector Accounting Standard No 01. Out of the distress loan balance amounting to Rs. 4,822,697 recoverable as at the last date of the year under review, the balance that would take more than a year for recovery had not been identified , not stated under the non-current assets.



2.2.2 Accounting Deficiencies

The following observations are made.

- (a) Amortization had not been accounted on the annual depreciation amounting to Rs. 382,690 for the container office building constructed under Government grants.
- (b) Action had not been taken to adjust unidentified direct debits amounting to Rs. 141,311 stated in the bank reconciliation statement, to the statement of income.

2.3 Accounts Receivable and Payable

Action had not been taken to settle creditor balances totaling Rs. 789,649 that remained outstanding for more than 02 years as at 31 December 2014.

2.4 Non-compliance with Laws, Rules, Regulations, and Management Decisions

The following Non-compliances with Laws, Rules, Regulations, and Management Decisions were observed.

<u>Reference to Laws, Rules, Regulations , and Management Decisions</u>	<u>Non-compliance</u>
(a) Regulation 371(c) of Financial Regulations of Democratic Socialist Republic of Sri Lanka.	Although ad hoc sub imprests should be settled as the intended tasks are completed , cash advances totaling Rs.1,726,100 given in 09 instances, had not been settled ,and out of that , advances amounting to Rs.266,600 had remained unsettled for more than one year.
(b) Section 3.4.1(a) of Procurement Guidelines	Bids had not been invited at least from 05 institutes for the 20 computers valued at Rs. 2,040,000 purchased in the year under review.



### 3. Financial Review

#### 3.1 Financial Results

According to the financial statements presented, the operations of the Foundation for the year ended 31 December 2014 had resulted in a surplus of Rs.9,478,985 as contrasted with the corresponding deficit of Rs.4,401,216 for the preceding year. Accordingly, an improvement of Rs.13,880,204 in the financial result for the year under review had been indicated. The surplus in the financial result had mainly been caused due to the increase of recurrent grants by a sum of Rs.22,894,000.

### 4. Operating Review

#### 4.1 Performance

The following observations are made.

- (a) The Foundation had concluded 54 researches worth of Rs. 80,016,591 in the years 2012, 2013, and 2014 , out of which , 02 research papers had been submitted for the assignment of technology with regard to elementary and applied researches concluded in the year 2014. Although a sum of Rs. 9,700,000 should have been granted in that regard, only a sum of Rs.100,000 had been granted by 31 December 2014.
- (b) Recommendations are made by a Committee after evaluating the final reports of the research projects. The following weaknesses were observed with regard to such reports.
  - (i) Unusual delays in the conclusion of researches and presentation of final reports.
  - (ii) Failure to present the final reports conforming with a standard.
  - (iii) Failure to achieve the objectives.
  - (iv) Despite the report being recommended as successful, the research is confined to a mere report.
  - (v) Failure to encourage the implementation in a manner productive to the country once the reports are evaluated.



#### 4.2 Management Inefficiencies

As the activities related to a grant are complete, the donee should settle the saving together with the final report. However, a sum of Rs. 2,798,134 had not been settled by donees with regard to 09 researches.

#### 4.3 Identified Losses

Due to underpayment of contributions to the Employees Trust Fund from January 2006 to December 2012, a surcharge of Rs. 408,301 had been paid.

#### 4.4 Operating Inefficiencies

The following observations are made.

- (a) An agreement valued at Rs. 2,999,000 had been entered into with the University of Colombo School of Computing on 15 February 2011 for the computerization of management information system of the Foundation. The computerization process should have been completed by 14 June 2012 though, it had not been completed even by the end of the year under review , and an expense of Rs. 1,157,100 had incurred in that regard.
- (b) Equipment valued at Rs. 9,132,365 had been granted by the Foundation during the year under review.
  - (i) According to the agreement governing the grant, once purchased, the equipment should be inventoried by the institute, and a copy should be sent to the Foundation together with a copy of the receipt. Nevertheless, it had not been so done with regard to 05 grants of equipment valued at Rs. 7,486,653.
  - (ii) Although a maintenance agreement should be signed between the supplier and the relevant institute after purchases had been made, such a maintenance agreement had not been entered into with regard to 02 grants.
  - (iii) According to the guideline on the preparation of progress reports, the first progress report should be submitted within a year after grants had been made; however, it had not been so done with regard to 07 grants.



#### 4.5 Idle and Underutilized Assets

The following observations are made.

- (a) The management had not taken any action on Man and Biosphere Fund and Scientific Reserve Fund that remained inactive since the year 2010 with sums of Rs. 1,829,977 and Rs.6,747,380 respectively.
- (b) Funds of 04 bank account balances totaling Rs. 5,798,120 as at 31 December 2014 had remained underutilized.

#### 4.6 Uneconomical Transactions

A sum of Rs. 632 million had been invested in the shares of Nanco Private Limited from 2008 to 2011. Ordinary share certificates and preference share certificates valued at Rs. 19,050,909 and Rs. 45,248,286 respectively had been issued under the name of the Foundation. According to the Gazette Extraordinary No 1736/23 published on 14 December 2011, the relevant company was functioning under the purview of the Ministry of Technology and Research. The Foundation had not received any benefit whatsoever in the year under review that ended as at 31 December.

#### 4.7 Personnel Management

The following observations are made.

- (i) Nineteen posts remained vacant as at 31 December 2014 including 14 executive posts.
- (ii) An external investigation officer had been appointed to look into the administrative issue on the appointment of Accounting Officers for the Foundation; however, action had not been taken even up to March 2015 to act accordingly by conducting investigations.
- (iii) Action had not been taken to conduct efficiency bar examinations as necessitated by the recruitment procedure approved by the Department of Management Services.



5. Accountability and Good governance

5.1 Action Plan

Although the Action Plan should state how the financial and physical targets should be achieved, it was not possible to evaluate the physical performance as the physical targets had not been included in the Action Plan presented by the Foundation.

6. Systems and Control

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Chairperson of the Foundation from time to time. Special attention is needed in respect of the following areas of control.

- (a) Control of fixed assets
- (b) Stocks control

W.P.C. Wickramaratne

Acting Auditor General

# NSF COMMENTS OF THE AUDIT REPORTS

Reference the report of the Auditor general as per Section 14(2) c of the Finance Act No 38 of 1971 in connection to the financial statement of National Science Foundation for the year ended 31st December 2014. Following actions have been already taken by the National Science Foundation regarding the matters pointed out by the above report.

## 21. Financial Statements

### 2.2. Comments on financial statements

#### 2.2.1. Sri Lanka Accounting Standards of Public Sector

Action is take from year 2015 to show all assets and liabilities in the on financial position statement on the order of liquidity and further to classify the balance of distress loans which takes more than one months for recovery under noncurrent assets .

#### 2.2.2, Accounting deficiencies

(a) Annual depreciation for the building for Container Office has been rectified by accounting the amount in the depreciation account.

(b) Documents pertaining to Rs. 141,311.00, which has not been identified in the bank reconciliation statement, have been received from bank in May 2015 and that amount has been excluded from the bank reconciliation statement for May 2015.

### 2.3. Accounts receivable and payable

The creditor balance of Rs. 752,846.00 has now been settled. Action would be taken to settle the remaining amount of Rs. 36,803.00 on or before 30<sup>th</sup> September 2015.

### 2.4. Non compliance to laws, rules and regulations

(a) Financial Regulation 371(c) -Rs 1,416,100.00 out of the financial advance of Rs. 1, 726,100.00 has been settled by July 2015 and action has been taken to settle the balance in due course.

Rs. 186,600.00 out of Rs. 266,000.00, which is shown as an amount remaining unsettled for more than one year, has already been settled and action will be taken to settle the balance also.

(b) Section 3.4.1. of Procurement Guidelines – (a) Closed quotations were called from 06 suppliers under shopping method for the purchase of these computers . 04 out of them have submitted quotations.

## 3. Financial review

### 3.1. Financial results

## 4. Operational review

### 4.1. Performance

#### 4.2. Management inefficiencies

Rs. 1,854,631.00, out of the amount to be settled by grantees in relation to 09 researches, of which the balances are shown to be settled, has already been accounted after settling and action has been taken to settle the remaining amounts in due course.

#### 4.3. Identified losses

A surcharge of Rs. 408,301.00 had to be paid due to the under payment of contribution to the Employees' Trust Fund for the period from January 2006 up to December 2012 as the cost of allowance has not been considered in paying contributions. At present this situation has completely been rectified.

#### 4.4. Operational inefficiencies

(a) Progress of this programme is reported monthly to the meeting of the Management Board and necessary follow up actions are taken by Technological Division. Rs. 1,157,100.00 have been paid strictly following the agreement. (Schedule 04)

Management Board has decided to get this task completed by Computer School of the University of Colombo maintaining a close supervision.

(b) (i) The copy of the entries made to the inventory and receipt for receiving goods have been received by National Science Foundation for only 04 grants out of the 05 grants mentioned in the query. Prompt action is taken to call required copies for other grants.

(ii) Reminders have already been sent to all institutions mentioned in connecting to grants to submit progress reports and supervision is also being made.

(iii) Progress reports have been received for 06 grants out of 07 mentioned in the query. Action has been taken to obtain progress report for the remaining grant.

#### 4.5. Non performing and underutilized assets

Funds received by National Science Foundation from the General Treasury are accounted in the form of Fund Accounts. The funds received from General Treasury during years prior to 2010 have been accounted in the form of Man and Biosphere Fund and Scientific Reserve Fund. No cash balance is shown in these accounts. Accordingly, the Foundation is of the view that these funds have been correctly accounted.

(b) The accounts No 2323376, RFC/USD/2872719 and RFC/USDLOICZ/2872732 of Bank of Ceylon have been opened for foreign aids and at present the project has been completed. Therefore action will be taken to close these accounts, of which the tasks have been concluded, after obtaining the instructions of the Ministry.

Income earned by selling of the journals of National Science Foundation is deposited in AC no 2322471 and this is not a non performing account.

#### 4.6. Uneconomical transactions

(a) Delays have occurred in awarding grants for technological transfers due to the delay in the receipt of allocations to National Science Foundation

(b) (i) Main reasons for the inability to conclude researches in due time

- Awarding of the grants is delayed every year by several months due to non receipt of financial allocations to National Science Foundation from the General Treasury.

Certain grantees cannot complete their research within the prescribed period as research assistants and technical assistants involving in the research tend to find other employments due to the inability to send provisions in due time.

- Once the grant has been awarded for research, Tender procedure should be followed for obtaining equipment and consumables which are required for such research and therefore a long time is taken to fulfill that procedure.
- Certain researches are designed with a view to collect consumer goods and samples within prescribed timeframes. (Seasonal Researches) Accordingly field visits are determined for the purpose depending on such timeframes. However all these plans are delayed since the allocations are not provided in due time

(ii) Every grantee is provided with an instruction manual and a specimen of a final report for obtaining final reports according to prescribed standards. Accordingly, recommendations are obtained submitting such final reports to relevant committee, only if they are submitted making corrections, which do not conform to the instructions and specimen.

(iii) Most of the researches achieve more than 75% of the expected goals. At such occasions, where researcher is unable to achieve target, a clarification is made by the respective researcher for the inability. Most probably the reasons, which make barriers to achieve the expected goal, are beyond the control of the researcher. At such occasions the National Science Foundation and the relevant committee analyze the situation and accordingly considering those facts, recommendations on final report are made.

(iv) There are occasions where the report is applied for making knowledge (Fundamental Research) even though the report is satisfactory and the findings of the same are really important. The practical application of them is very limited. However our knowledge is communicated to the international level by way of International Research papers whilst contributing directly to provide knowledge and build capacity through Post Graduate Studies for the development of the country.

(v) Report of researches, which can be applied practically for the enhancement of the country, are submitted to the technological division and accordingly it is encouraged to take further action in this regard.

In addition to the above, a specimen is sent to the grantee to indicate the way for applying research for the benefit of the country along with the final report.

However necessary action will be taken in due course to minimize such situations pointed out by the audit report.

Since the investment in shares of Nanco Pvt Ltd is an investment by Investment Research and Development Division, it was not expected quick benefits from such investment. Further this investment has been made through the Ministry of Technology and Research based on the Cabinet decision and deviating from the administration of the institution. Further necessary action and decisions are taken by the Ministry. In the meantime further action should also be taken on the instruction of the Ministry.

#### 4.7. Staff management

(i) Action had been taken to make recruitments on contract basis to 05 posts of scientific officer and post of the Head of Financial and Administration out of the posts in executive grade in August 2015.

Since the salary scale of the post of Chief Scientific officer is comparatively at a lower level when considering the role and experience, it has become difficult to recruit officers possessing required qualifications despite the action taken to fill vacancies. Therefore action will be taken in future to find alternative steps on the instructions of the Management Board.

(ii) Report of the inquiry has now been received further action will be taken on the instructions of the Management Board.

(iii) Action is being taken to conduct Efficiency bar examinations, which are to be conducted as per Procedure of Recruitment and Promotion, from October 2015 for each employee category.

#### 5. Accountability and good governance

##### 5.1. Action plan

The action plan of the Foundation for year 2014 has been submitted with the inclusion of physical targets for activities to which financial as well as physical targets could be shown. Further figures were shown separately for each quarter. Since financial allocations for year 2014 were at a lower level than the expected value it has to face with obstacles in the achievement of certain physical targets. Therefore the action plan was revised in August and financial allocations were transferred among relevant divisions.

#### 6. Systems and control

(a) It has been indicated in fixed assets register showing correctly the division to which the attachment has been made and further steps have been taken to update annual depreciation account.

(b) A separate register is maintained for the stock of scientific publications which were written off from year 2015.

Chairman

National Science Foundation



# ANNEXES

## Research Grants Completed during – 2014

## Working Committee on Biotechnology &amp; Bioethics

Grant No. & Duration	Grantee(s)/Institute	Project Title	Total Allocation (Rs.)
RG/2007/BT/02 (3 Years)	<b>Dr. D. M. Deepthi Yakandawala</b> Dept. of Botany, University of Peradeniya <b>Dr. Preminda Samarajeewa</b> Dept. of Molecular Biology & Biotechnology, University of Peradeniya	Taxonomy and Phylogenetic relationships of some selected endemic genera <i>Amomum Roxb.</i> and <i>Alpinia Roxb.</i> of the family Zingiberaceae.	2,261,682
RG/2007/BT/05 (3 Years)	<b>Dr. Devika M. De Costa</b> Dept. of Agricultural Biology Fac. of Agriculture, University of Peradeniya	Control of tomato bacterial wilt caused by <i>Ralstonia solanacearum</i> ( <i>Pseudomonas solanacearum</i> ) using bacteriophages	1,622,000
RG/2008/BT/01 (2 Years)	<b>Dr. A.A.L. Ratnatilleke</b> Dept. of Chemistry, University of Kelaniya	Isolation and typing of nitrogen fixing bacteria associated with rice	1,623,675
RG/2010/BT/02 (2 Years)	<b>Dr. (Mrs) D. H. N. Munasinghe</b> Dept. of Zoology, University of Ruhuna, Matara	Population genetic structure analysis of <i>Penaeus monodon</i> in Sri Lanka	1,050,352

## Working Committee on Basic Sciences

Grant No. & Duration	Grantee/Institute	Project Title	Total Allocation (Rs.)
RG/2011/BS/03 (2 years)	<b>Dr. Varuni A. Seneviratne,</b> Department of Physics, University of Peradeniya	Synthesis and characterization of novel polymer electrolytes with possible applications in electrochemical devices such as rechargeable batteries, supercapacitors and solar cells.	1,860,000
RG/2011/BS/03 (2 years)	<b>Dr. K. G. Nadeeshani Nanayakkara,</b> Institute of Fundamental Studies, Hanthana Road, Kandy	Development of an electrochemical technology to remove nitrate from contaminated groundwater	821,020

### Working Committee on Health Sciences

Grant No. & Duration	Grantee/Institute	Project Title	Total Allocation (Rs.)
RG/2011/HS/01 (2 years)	<b>Dr. Gathsaurie Neelika Malavige</b> Department of Microbiology Faculty of Medical Sciences University of Sri Jayawardanapura	Identifying biomarkers for predicting severe disease in dengue infections	1,306,000
RG/2011/HS/15 (2 years)	<b>Dr N K Carukshi K Arambepola</b> <b>Dr P B V R Kumari</b> Department of Community Medicine Faculty of Medicine University of Colombo	Risk factors and risk assessment of breast cancer among women in the district of Colombo	993,780

### Working Committee on Environment and Biodiversity

Grant No. & Duration	Grantee/Institute	Project Title	Total Allocation (Rs.)
RG/2008/EB/03 (1 years)	<b>Dr. Wipula B Yapa</b> Department of Zoology University of Colombo	Preliminary investigations on the Ecology and the phylogenetic relationships of coronaviruses of Sri Lankan bats	<b>287,120.00</b>

### Working Committee on Science & Technology Policy Studies

Grant No. & Duration	Grantee (Name /affiliation)	Project Title	Total allocation (Rs.)
RG/2011/STP/01 (18 months)	<b>Dr Parakrama Samaratunga</b> <b>Ms Dilani Hirimuthugoda</b> Institute of Policy Studies	Intellectual Property Rights in Protecting Plant Varieties and Farmers Traditional Knowledge – The Case of Rice in Sri Lanka	<b>727,400.00</b>

Awards for scientific achievements NTRP – Food Security –  
Ongoing Grants as at 31-12-2014

Programme No, & Grant No.	Project Leader/ Institute	Title of the project	Allocation (Rs.)
<b>Programme 1</b> NTRP/2012/FS/PG-01/P-01	<b>Dr. R M Herath</b> Dept. of Agriculture	Development of web based crop forecasting system in Sri Lanka	For 1 year from April 2014 – Rs. 2 297 000
NTRP/2012/FS/PG-01/P-02	<b>Prof. G N Wikramanayake</b> University of Colombo School of Computing	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	For 1 year from April 2014 – Rs. 3 200 000
<b>Programme 2</b> NTRP/2013/FS/PG-02/P-01	<b>Prof. K K D S Ranaweera</b> Department of Food Science and Technology University of Sri Jayewardenepura	Application of novel techniques to minimize postharvest losses of five selected fruit and vegetable varieties	For the first six months- Rs. 1 659 600
NTRP/2013/FS/PG-02/P-02	<b>Dr H L D Weerahewa</b> Dept. of Botany Open University of Sri Lanka Nawala	Food security through adoption of pre-harvest technologies: Improving quality of fresh produce by soil application of Potassium and Silicon	For the first six months- Rs. 1 590 000
Programme 3 NTRP/2012/FS/PG-3/P-01	<b>Dr T B Ananda Jayalal</b> Ministry of Health	Establishing a national system for ensuring microbiological food safety	For 1 year from April 2014- Rs. 1 530 000
Programme 4 NTRP/2012/FS/PG-04/P-02	<b>Dr Athula Senarathna</b> Institute of Policy studies	A study of supply and price behavior Relating to selected crops and livestock products in Sri Lanka	For 1 year from August 2014 – Rs. 2 470 000
NTRP/2012/FS/PG-04/P-01	<b>Prof. Udith K Jayasinghe-Mudalige</b> Dept. of Agribusiness Management Wayaba University of Sri Lanka	Assessing internal and external trade policies and practices affecting food security in Sri Lanka, and identifying areas for improvement	For 1 year from April 2014 – Rs. 10 729 000
Programme 5 NTRP/2012/FS/PG-05/P-01	<b>Dr. S Pathmarajah</b> Dept. of Agricultural Engineering University of Peradeniya	Development of Household Food Security models for poverty stricken areas of Sri Lanka	For 1 year from December 2014 – Rs. 900 640
NTRP/2012/FS/PG-05/P-02	<b>Prof. G Mikunthan</b> Dept. of Agricultural Biology University of Jaffna	Development of sustainable integrated food production systems to enhance household food and nutritional security, economic growth and livelihood of resource poor families in the Northern Region of Sri Lanka	For 1 year from April 2014 – Rs. 2 465 000

## Research Equipment Grants – 2014

No	Applicant / Designation & Institute	Responsible Officer for the Equipment	Equipment	Approved Amount
01	<b>Prof. K. R. R. Mahanama</b> Dean Faculty of Science University of Colombo	Prof. R. D. Wijesekara Dept. of Chemistry Faculty of Science University of Colombo	Shaking Incubator	Rs. 586,686/-
02.	<b>Prof. Rohan W. Jayasekara</b> Dean Faculty of Medicine University of Colombo Kynsey Road Colombo – 08	Prof. C. P. D. W. Mathew Dept. of Biochemistry & Molecular Biology, Faculty of Medicine University of Colombo	Vertical – 20 ° C High Performance Enzyme Freezer	Rs. 1,447,600/-
03.	<b>Dr. Subha Heenkenda</b> Director Fruit Research & Development Institute Horana	S. D. R. Wanniarachchi Head Soil Science & Plant Nutrition Fruit Research and Development Institute	UV –Vis Single Beam Spectrophotometer	Rs. 813,873/-
04	<b>Prof. Anura Wickramasinghe</b> Dean Faculty of Science University of Peradeniya Peradeniya	Prof. Deepthi Yakandawala Dept. of Botany University of Peradeniya Peradeniya	Multigene Optimax Gradient	Rs. 825,000/-
05	<b>Prof. S. A. Ariadurai</b> Dean Faculty of Engineering Technology The Open University of Sri Lanka Nawala	Dr. Sunil Thrikawala Agricultural and Plantation Engineering The Open University of Sri Lanka	Rotary evaporator RV 10 Digital Vacuum Pump	Rs. 897,080/-
06	<b>Dr. D. B. Mahinda Wickramaratne</b> Dean Faculty of Allied Health Sciences University of Peradeniya	Dr. M. P. S. Mudalige Head Dept. of Medical Laboratory Science Faculty of Allied Health Sciences	Research Microscope with digital camera and software to capture photomicrographs and analysis	Rs. 1,072,500/-
07.	<b>Dr. S. S. Iqbal</b> Dean The Open University of Sri Lanka Nawala	Dr. S. R. Weerakoon Head Dept. of Botany The Open University of Sri Lanka Nugegoda	Gradient PCR (Thermal Cycler)	Rs. 825,000/-
08.	<b>Dr. W. M. G. Seneviratne</b> Director Rubber Research Institute Agalawatta	Dr. (Mrs. T. H. P. S. Fernando Dept. of Plant Pathology & Microbiology Rubber Research Institute	Gradient PCR (Thermal Cycler)	Rs. 825,000/-

## Summary of Research Grants Scheme - 2014

		Agriculture & Food Science	Basic Sciences	Biotechnology & Bioethics	Environment & Biodiversity	Engineering, Architecture & ICT	Health Sciences	Library & Information	Social Sciences	S & T Policy Studies	Science Education	Oceanography & Marine Sciences	Total
01	Total no of ongoing grants as at 31.12.2014	25	18	22	15	03	30	-	03	02	-	01	119
02	Grants awarded	04	02	04	05	01	09	-	03	-	-	01	29
03	Grants completed	01	02	04	01	-	02	-	-	01	-	-	11
04	Grants withdrawn	-	-	-	-	-	-	-	-	-	-	-	-
05	Grants terminated	-	-	-	-	-	-	-	-	-	-	-	-
06	RSs appointed/to be appointed	03	-	03	05	01	04	-	03	01	-	-	20
07	RSs registered for postgraduate degree/ to be registered for post graduate degree	10	02	02	05	01	04	-	03	01	-	-	28
08	TAs appointed/to be appointed	01	-	-	01	01	03	-	01	-	-	-	07
09	Postgraduate degrees obtained PhD	02	01	-	-	-	01	-	01	-	-	-	05
	MPhil	02	-	03	-	01	01	-	02	-	-	-	09
	MSc	-	-	-	-	-	01	-	-	-	-	-	01
	MD	-	-	-	-	-	-	-	-	-	-	-	-
10	No of publications arising from grants (Foreign)	00	01	00	03	02	02	-	-	-	-	00	08
11	No of publications arising from grants (Local)	00	00	1	01	01	00	-	-	-	-	00	03
12	Communications	10	25	20	07	05	20	-	-	-	-	00	87

## NSF Research Awards

## Research Awards – 2012

Working Committee	Grantee	Grant No/ Project Title
Basic Sciences	<p><b>Prof. Namal Priyantha</b> Department of Chemistry, University of Peradeniya</p> <p><i>Research Student</i> Mr Anushka Bandaranayaka (MPhil)</p>	<p><b>RG/2007/FR/06</b></p> <p>“Mechanistic investigation of interaction of chromium species and thermally heated brick clay”</p>

## Research Awards – 2013

Working Committee	Grantee	Grant No/ Project Title
Biotechnology and Bioethics	<p><b>Dr S. N. Surendran</b> Department of Zoology Faculty of Science, University of Jaffna, Jaffna</p> <p><i>Research Student</i> Mr P. J. Jude (MPhil)</p>	<p><b>RG/2006/BT/03</b></p> <p>“Bionomics of the sibling species of the <i>Anopheles culicifacies</i> species complex in Sri Lanka”</p>

## Certificates of Commendation -2013

Working Committee	Grantee	Grant No/ Project Title
Biotechnology and Bioethics	<p><b>Dr Ranil Samantha Dasanayake</b> Department of Chemistry, University of Colombo</p> <p><b>Prof. E.H. Karunanayake</b> <b>Dr O.V.D.S.J. Weerasena</b> Institute of Biochemistry, University of Colombo</p> <p><i>Research Student</i> Ms W. W. P. Rodrigo (PhD)</p>	<p><b>RG/2006/BT/04</b></p> <p>“Structural and functional characterization of putative nuclear cell envelope like parasitic nematode specific growth factor protein from goat and sheep parasite, <i>Setaria digitata</i> and human filarial parasite “<i>Wuchereria bancrofti</i>”</p>
Biotechnology and Bioethics	<p><b>Prof. W.A.J. M. De Costa</b> <b>Dr Devika M. De Costa</b> Department of Crop Science Faculty of Agriculture, University of Peradeniya</p> <p><i>Research Student</i> Ms A. R. F. Zahra (PhD)</p>	<p><b>RG/2007/BT/01</b></p> <p>“Expression of candidate genes for salt tolerance in Sri Lankan rice germplasm”</p>
Health Sciences	<p><b>Prof. P.S. Wijesinghe</b> Department of Obstetrics &amp; Gynaecology Faculty of Medicine, University of Kelaniya</p> <p><b>Prof. Harshalal Seneviratne</b> Department of Obstetrics &amp; Gynaecology, Faculty of Medicine, University of Colombo</p> <p><b>Dr T.S. Palihawadana</b> Department of Obstetrics &amp; Gynaecology, Faculty of Medicine, University of Kelaniya (completed the MPhil through this research)</p>	<p>infertile population of Sri Lanka and a prospective randomized comparison between Clomiphene citrate and Letrozole, in ovulation induction and augmentation”</p>

**TWAS/NSF Young Scientist Awards 2013**

<b>Award Winner</b>	<b>Field</b>
Dr Anjana Silva	Biology

## Awards for scientific achievements SUSRED Awards 2014

## Awards for PhD

Supervisory Team	Project Title
<p><b>Prof. Udith Jayasinghe-Mudalige</b> Department of Agribusiness Management Faculty of Agriculture &amp; Plantation Management Wayamba University of Sri Lanka Makandura</p> <p><b>Prof. Ananda Patabandige</b> 119/1, Mahawela Road Pahalabiyawila Kadawatha</p>	The influence of demographic- perception and cultural-values on status/conspicuous consumptions in Sri Lanka - a comparison of cross cultural-perception of Sri Lankan status-seeking consumers

## Awards for MPhil

Supervisory Team	Project Title
<p><b>Dr V P S Perera</b> Department of Physics The Open University of Sri Lanka, Nawala</p>	Characterization of composite electrodes of dye sensitized solar cells using impedance spectroscopic analysis
<p><b>Prof. Sivashanthini Kuganathan</b> Department of Fisheries Faculty of Science, University of Jaffna</p>	Reproductive characteristics of <i>Scomberoides lysan</i> (Forsskal, 1775) (Pisces: Carangidae) from the waters around Jaffna peninsula, Sri Lanka
<p><b>Prof. Sivashanthini Kuganathan</b> Department of Fisheries Faculty of Science, University of Jaffna</p>	Lipid changes in relation to sexual maturity and spawning in <i>Scomberoides lysan</i> (Carangidae) from waters around Jaffna peninsula, Sri Lanka
<p><b>Prof. R M G Rajapakse</b> Department of Chemistry</p> <p><b>Dr Sanath Rajapakse</b> Department of Molecular Biology &amp; Biotechnology Faculty of Science, University of Peradeniya</p>	Development of self-cleaning and anti-microbial textile material
<p><b>Dr Meththika Vithanage</b> Institute of Fundamental Studies, Kandy</p> <p><b>Prof. B F A Basnayake</b> Department of Agricultural Engineering Faculty of Agriculture, University of Peradeniya</p>	Application of zero valent iron for the treatment of landfill leachate generated from Gohagoda municipal solid waste dumpsite

## Travel Grants Awarded

## Oral Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
1	Dr A.G. Johnpillai Senior Lecturer, Dept. of Mathematics Eastern University of Sri Lanka Vantharumoolai, Chenkalady	Travelling wave group - invariant solutions and conservation laws for equation	Symmetries, Differential Equations and Applications (SDEA-III) Islamabad, Pakistan  27 - 30 Jan. 2014
2	Mr J.D.M. Senevirathna Research Assistant, Dept. of Zoology Faculty of Science University of Ruhuna, Matara	Genetic diversity and population structure of panulirushomarus populations of Southern Sri Lanka and South India revealed by the mitochondrial COI gene region	International Conference on Food, Biological and Medical Sciences (FBMS-2014), Bangkok, Thailand  28 - 29 January 2014
3	Dr G.N.D. Perera Lecturer in Medicine, Dept. of Medicine University of Sri Jayawardenapura, Nugegoda	1. Non motor symptoms in patients with parkinson disease : experience from a tertiary care center in Sri Lanka 2. Demographic factors and patient characteristics in Parkinson disease : an observational study in Sri Lanka 3. Comparison of risk factors, severity and outcome between lacunar and non-lacunar stroke	14 Asian & Oceanian Congress of Neurology (AOCN 2014) Macau, China  02 - 05 March 2014
4	Ms A.S. Hewage Scientific Assistant Ins. Of Biochemistry and Molecular Biology, University of Colombo Colombo	Association of common polymorphisms in H19 gene with birth weight in a Sri Lankan cohort of mother-baby pairs	16 World Congress of Gynecological Endocrinology, Florence, Italy  05 - 08 March 2014
5	Dr H.N. Munasinghe Senior Lecturer, Dept. of Zoology University of Ruhuna, Matara	Availability of morphologically similar, genetically diverge penaeus monodon populations in Sri Lanka	International Conference on Emerging Trends in Scientific Research, Kuala Lumpur, Malaysia  15 - 16 March 2014
6	Ms I.N. Harischandra Dept. of Zoology, Faculty of App. Science University of Sri Jayawardenapura, Nugegoda	Anopheles culicifacies Giles s.l. sibling species E in Sri Lanka varies intra-specifically in amino acid sequence of the Cytochrome Oxidase II (CO II) gene of mitochondrial DNA	6 ASEAN Congress of Tropical Medicine and Parasitology (ACTMP 2014) Kuala Lumpur, Malaysia  05 - 07 March 2014
7	Dr I.G.P. Rajapaksha Senior Lecturer, Dept. of Architecture University of Moratuwa, Moratuwa	Diversified locals for enhancing outdoor thermal acceptability : a case of water fringed urban parks in Colombo	Windsor Conference 2014: Counting the cost of comfort in a changing world. London, UK  10 - 13 April 2014
8	Dr M. Edussuriya Senior Lecturer, Faculty of Science University of Ruhuna, Matara	Inhibition of mild steel corrosion in 1 M HCl medium by water extracts of jackfruit (Artocarpus heterophyllus Lam.) and teak (Tectona grandis L.) Leaves	The 3 International Congress on Natural Sciences and Engineering, Kyoto, Japan  07 - 09 May 2014
9	Mr K.A.S.H. Kulathilake Post Graduate Research Student Dept. of Information Technology University of Moratuwa, Moratuwa	Hierarchical regional based template matching (HRTM) technique for global motion reduction of coronary cineangiograms	3rd International Conference on Computer Technology and Science Sarawak, Malaysia  07 - 08 June 2014

## Oral Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
10	Dr S.M.N.D. Subasinghe Senior Research Fellow Institute of Fundamental Studies Kandy	Analytical signal and reduction to pole interpretation of total magnetic field data at Eppawala phosphate deposit	3rd International Conference on Geology and Geophysics (ICGG 2014) Beijing, China  13 - 15 June 2014
11	Ms K.M.Weerasinghe Deputy Project Director National Building Research Organization 99/1, Jawatte Rd, Colombo 05	Applicability of relative weights derived for Nuwaraeliya and Badulla regions to the areas with different terrain and climatological characteristics	World Landslide Forum Beijing, China  02 - 06 June 2014
12	Ms C. Devasirie Lecturer, Dept. of Sociology University of Colombo , Colombo 03	A case study in the application of the dialectical analysis on friendship and shared understandings in plato'scrito	Revisiting 'On the Beginning of Social Inquiry', Edinburgh, UK  10 - 11 June 2014
13	Dr R.R. Ratnayake Research Fellow Institute of Fundamental Studies, Kandy	Soil organic carbon fractions, aggregate stability, nutrient availability and their interrelationships to tropical cropping systems	20th World Congress of Soil Science Jeju, Korea  08 - 13 June 2014
14	Ms H.R.K. Nagahamulla Lecturer, Dept. of Computing and Information Systems Wayamba University of Sri Lanka, Kuliyaipitiya	Selecting most suitable members for neural network ensemble rainfall forecasting model	The First International Conference on Soft Computing and Data Mining Johor, Malaysia  16 - 18 June 2014
15	Dr S.S. Seneviratne Senior Lecturer Dept. of Zoology University of Colombo, Colombo 03	A peculiar biogeographic history for a flameback woodpecker ( <i>Dinopium benghalense</i> ) revealed through high throughput sequencing	51 Meeting of the Association of Tropical Biology and Conservation Cairns, Australia  20 - 24 July 2014
16	Dr J.J. Wijetunge Senior Lecturer Dept. of Civil Engineering University of Peradeniya, Peradeniya	Disaster risk assessment and mitigation strategy for tropical cyclone induced storm surge hazard and coastal impacts of climate change in Sri Lanka	11th International Conference on Hydroinformatics New York, USA  17 - 21 August 2014
17	Prof. S.R. Weerakoon Professor in Botany Dept. of Botany The Open University of Sri Lanka, Nawala	The ecological provenance of phenotypic and genotypic variation in mustard ( <i>Brassica juncea</i> (L.) Czern&Coss) accessions in Sri Lanka	29th International Horticultural Congress 2014 (IHC 2014) Brisbane, Australia  17 - 22 August 2014
18	Dr D.P. Wickramasinghe Lecturer (Probationary) Dept. of Surgery, Faculty of Medicine University of Colombo Kensy Rd, Colombo 08	1. Correlates of improvement in nurses participating in a four week stoma care training program in a developing country  2. Three dimension (3D) manometric and ultrasound characteristics of the anal sphincter in Sri Lanka  3. Types and patterns of colonic polyps encountered at a tertiary care center	International Society of University Colon and Rectal Surgeons' Meeting Cape Town, South Africa  04 -07 September 2014

## Oral Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
19	Ms U.A. Jayawardena Research Assistant Dept. of Zoology University of Colombo, Colombo 03	Heavy metal mediated immunotoxicity of Euphyllitishexadactylus: A comparative study of field and empirical exposure	Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference Adelaide, Australia  14 -17 September 2014
20	Dr R.M.U.N. Rathnayake Senior Research Officer Rubber Research Institute of Sri Lanka, Telawala Rd, Ratmalana	Vulcanization characteristics and reinforcement of quaternary alkylammonium modified clay filled natural rubber nanocomposites	International Rubber Conference (IRC), Beijing, China  16 - 18 September 2014
21	Prof. M.M.A.N. Navaratne Associate Professor in Chemistry Dept. of Chemistry University of Peradeniy, Peradeniya	Toxicity of propanil, glyphosate, chlopyrifos and dimethoate on Asian common toad (Duttaphrynus melanostictus)and common hourglass tree frog (Polypedatescruciger) empirical evidence from Sri Lanka	Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference Adelaide, Australia  14 -17 September 2014
22	Dr J.A.P. Bodhika Senior Lecturer Dept. of Physics University of Ruhun, Matara	A preliminary study on characteristics of thunder pulses of lightning Oral Presentation	32nd International Conference of Lightning Protection Shanghai, China  12 - 18 October 2014
23	Dr L.D.C. Peiris Senior Lecturer University of Sri Jayawardenapura, Nugegoda	Hypoglycaemic and hypolipidemic effects of aqueous flower extract from Nycanthus arbor-tristis L. Oral Presentation	ICEEBS 2014: International Conference on Ecological and Biological Sciences Dubai, UAE  18 - 19 October 2014
24	Dr A.K. Kulatunga Lecturer, Dept. of Production Eng. University of Peradeniya, Peradeniya	Enhancing sustainability of local rice mills by cleancer production and industrial ecological principles	International Conference on Challenges in Environmental Science & Engineering Johor Bahru, Malaysia  12 - 16 October 2014
25	Mrs J. Kohila Research Student IFS, Hantana Road Kandy	Annealing effect of CdSthinfilms prepared by chemical bath deposition method Oral Presentation	International Conference on Material Science and Technology Puspipetek Serpong, Indonesia  13 - 17 October 2014
26	Ms K.G.A.P.K. Amarasinghe Lecturer (Probationary) Dept. of Plantation Management Faculty of Agriculture and Plant Mgmt. Wayamba University of Sri Lanka, Makandura	Effects of heat and drought stress on the development of reproductive organs of different coconut (Cocosnucifera L.) cultivars under controlled pollination conditions in Sri Lanka	International Conference on Advances in Plant Sciences - 2014 Kuching, Malaysia  18 - 22 November 2014
27	Dr B.D.R. Prasantha Senior Lecturer Dept. of Food Science & Technology University of Peradeniya, Peradeniya	Effect of hermetic storage on end-use quality of mungbean	11th International Working Conference on Stored Production Protection Chiang Mai, Thailand  24 - 28 November 2014

## Oral Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
28	Prof. R.T. Seresinghe Senior Professor Dept. of Animal Science Faculty of Agriculture University of Ruhuna, Kamburupitiya	In - vitro ruminal fermentation of panicum maximum (Wild Guinea-Ecotype A) and rice straw as influenced by treatment of fibrolytic enzymes	The 16th AAAP (Asian-Australian Association of Animal Production Societies) Animal Science Congress Yogyakarta, Indonesia  10 - 14 November 2014
29	Dr B.R. Fernando Senior Lecturer Dept. of Veterinary Public Health & Pharmacology University of Peradeniya, Peradeniya	Determination of introfuran metabolites in shrimp muscle tissue by liquid chromatography - photo diode array detection	International Symposium on Food Safety & Quality : Applications of Nuclear and Related Techniques Vienna, Austria  10 - 13 November 2014
30	Dr K.M. Mewan Senior Research Officer Biochemistry Division Tea Research Institute of Sri Lanka Talawakelle	Genic microsatellite markers as a potential source to identify blister blight disease resistant trait in Sri Lankan tea cultivars	International Symposium on Tea Science and Tea Culture 2014 Jeju, Korea  04 - 06 November 2014
31	Prof. J.A. Liyanage Director Gampaha Wickramarachchi Ayurveda Institute, Yakkala	Chronic renal failure in Sri Lanka caused by elevated metal intake	7th International Congress of Environmental Research, Bangalore, India  26 -28 December 2014
32	Dr T.M. Samarasinghe Demonstrator, Dept. of Surgery Faculty of Medical Sciences University of Sri Jayawardenapura, Nugegoda	Minimal access management of urinary stones in toddlers and children - Our experience	Experts in Stone Disease Conference, Capte Town, South Africa,  10 - 13 Dec. 2014
33	Ms N. Paranamana Research Assistant, Faculty of Science University of Ruhuna, Matara	Growth performance of guppy fry fed on diets contain jack fruit seed meal as practical replacement of fishmeal	4th International Science Congress Association (ISC-2014), Rajasthan, India,  08 - 09 Dec. 2014
34	Dr G.A.D. Perera Senior Lecturer, Dept. of Botany University of Peradeniya, Peradeniya	Morphological and physiological adaptations of Manilkara hexandra to survive in dry drought prone areas in the tropics	Tropical Ecology Congress 2014 - "Tropical Ecosystems in a changing world", New Delhi, India  10 - 12 Dec. 2014
35	Ms D.M.P. Dias Research Assistant UCSC, University of Colombo Colombo 03	Achieving sustainability of e-Government projects in Developing Nations	25th Australasian Conference on Information Systems (ACIS 2014), Auckland, New Zealand,  08 - 10 Dec. 2014
36	Ms W.C. Uduwela Lecturer (Probationary) Open University of Sri Lanka Nawala	Survey on tools and systems to generate ER diagram from system requirements specification	IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Malaysia,  09 - 12 Dec. 2014
37	Mr M. Ramanan Lecturer (Probationary) Faculty of Applied Science Trincomalee Campus, Eastern University	A Performance comparison and post - processing error correction technique to OCRs for printed Tamil texts	09th IEEE International Conference on Industrial and Information Systems (ICIIS 2014), Gwalior, India,  15 - 17 Dec. 2014

## Poster Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
1	Mr H.A.S. Weerasinghe Research Officer , Div. of Crop Nutrition Sugarcane Research Institute ,Udawalawe	Fungal - Bacterial biofilms for sugarcane (Saccharum hybrid species) trash decomposition	International Conclave on Sugar Crops & Sugar Fest 2014 , Lucknow, India  15 - 17 Feb. 2014
2	Dr S.W. Kotalawala Senior Registrar in Child and Adolescent psychiatry, University Psychiatry Unit Lady Ridgeway Hospital, Colombo	1. Prevalence of depression among patients with a history of traumatic brain injury  2. Criminal responsibility for murder among remand prisoners sent for forensic psychiatric assessment in Sri Lanka  3. Analysis of the behaviour and content of psychopathology in patients with mania  4. Analysis of medical, psychosocial background and psychopathology among persons referred to psychiatric unit of teaching hospital, Karapitiya, Sri Lanka after deliberate self-harm  5. Health seeking behaviour in parents of children and adolescents with mental health problems in Sri Lanka	22 European Congress of Psychiatry (EPA 2014), Munich, Germany  01 - 04 March 2014
3	Dr R.S. Rajakaruna Head of the Department Dept. of Zoology University of Peradeniya , Peradeniya	Effect of nest depth and nest temperature on the hatching success of green turtle eggs relocated in turtle hatcheries in Southwest coast of Sri Lanka	34 Annual Symposium of Sea Turtle Biology and Conservation, New Orleans, USA  10 - 17 April 2014
4	Ms A.S. Mendis (PhD Student) IBMBB, University of Colombo Cumaratunga Munidasa Mw, Colombo 03	Effect of Flueggealeucopyrus willd., decoction on the proliferation and heat shock protein expression in three human breast cancer cell phenotypes: an in-vitro evaluation. -	5 Asia Pacific International Society for the Study of Xenobiotics Meeting, Tianjin, China  09 - 12 May 2014
5	Dr D.P.C.K. Anandalal Registrar in Surgery University Surgical Unit National Hospital of Sri Lanka Colombo 10	Angiographic patterns of takayasu's arthritis in Sri Lanka	8 Congress of Asian Society of Cardiovascular Imaging (ASCI 2014) Jeju, Korea  12 - 14 June 2014
6	Dr W.V.V. De Silva Medical Officer District General Hospital, Matale	A Pilot study to compare the protease activity in fibroid tissue and adjacent myometrium	The International Student Congress of (bio) Medical Sciences (ISCOMS) Groningen, Netherlands  03 - 06 June 2014
7	Dr H.M.I.K. Herath Senior Research Officer Soil and Plant Nutrition Division Coconut Research Institute Lunuwila	Using water foot printing to reduce the impact of the use of agricultural water and agrochemicals on water resources	20 World Congress of Soil Science Jeju, Korea  08 - 13 June 2014
8	Ms A.M. Samaraweera Probationary Lecturer Dept. of Animal Science Uva Wellassa University, Badulla	Wild boar (Sus scrofa) meat authentication using melanocortin receptor 1 (MC1R) gene	34th International Society for Animal Genetics Conference (34 ISAG Conference) Xi'an, China  28 July - 01 Aug. 2014

## Poster Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
9	Dr V.Y. Waisundara Research Fellow Institute of Fundamental Studies Hantana Rd, Kandy	Comparison of the antioxidant properties of fermented teas (Kombucha) as functional food	17th International Union of Food Sciences & Technology Congress Montreal, Canada  17 - 21 August 2014
10	Dr S.P. Sumanasena Senior Lecturer Consultant Pediatrician Faculty of Medicine University of Kelaniya, Kelaniya	Developmental outcomes within the first year of diagnosis; a descriptive study of children diagnosed with infantile spasms	68th Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine San Diego, USA  10 -13 September 2014
11	Ms C.K. Hemachandra Research Assistant Dept. of Zoology, Faculty of Science University of Kelaniya, Kelaniya	1. Application of multiple biomarker approach for monitoring tropical inland water pollution : a case study from Sri Lanka  2. Application of fish based bioassays for evaluating cyto-genotoxicity of selected textile industry effluents reaching Kelani River, Sri Lanka	Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference Adelaide, Australia  14 -17 September 2014

## Oral Presentation & Poster Presentation

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
1	Dr P.H.G.J. Pushpakumara Lecturer (Probationary) Dept. of Psychiatry Rajarata University of Sri Lanka Mihintale	1. The life-skills model of suicidal behavior : an explanation to long-lasting epidemic of suicidal behavior in developing countries  <i>Oral Presentation</i>  Impact of life-skills, help seeking ability, meant at health and childhood experiences on acute intentional self poisoning in rural Sri Lanka : A case -control study  <i>Poster Presentation</i>	15th European Symposium on Suicide and Suicidal Behaviour Tallinn, Estonia  27 - 30 August 2014

## Invited Lecturer & Symposium Lecturer

	Name and Address	Title of the Abstract	Title of the Event, Venue & Date
1	Prof. V.S. Weerasinghe Professor of Physiology Faculty of Medicine, University of Peradeniya , Peradeniya	1. Neurophysiological assessment of neuromuscular junction and the effect of toxins/poisons  2. Teaching neuroscience using vertically and horizontally integrated approach  <i>Invited Lecturer</i>	04th Biennial Regional Conference of South Asian Association of Physiologist (SAAP) and 3rd National Convention of Bangladesh Society of Physiologists (BSP), Dhaka, Bangladesh,  05 - 07 Dec. 2014
2	Prof. N.K.B. Adikaram Senior Professor Dept. of Botany University of Peradeniya, Peradeniya	Suppression of postharvest pathogens by manipulation of fruit defence  <i>Symposium Lecturer</i>	3rd Global Sustainable Biotechnology Congress, Aurangabd, India,  01 - 05 Dec. 2014

## OSTP Grant Awarded

	Name and address	Type of OSTP Grant	Title of the training programme, venue and Date
1	<b>Mr A.P. Henagamage</b> Lecturer (Probationary), Department of Science and Technology, Faculty of Science and Technology, Uwa Wellassa University, Passara Road, Badulla.	NSF Training Scholarship	Molecular Characterization of Biofilm Microorganisms responsible for Pant Growth Promotion of Potatoes, 20th June-30th September 2014, University of Sydney, Australia.
2	Dr W.L.D.S. Sumathipala Lecturer, Human Genetics Unit, Faculty of Medicine, University of Colombo.	NSF Training Scholarship	Summer School for Clinical Myology, 10th - 18th June 2014, Myology Institute, Paris.
3	Dr K.K.S.P. Kodithuwakku Senior Lecturer, Department of Animal Science, Faculty of Agriculture, University of Peradeniya, Peradeniya.	NSF Training Fellowship	Frontiers in Reproduction of 2014, 03rd May - 15 the June 2014, Marine Biology Laboratory, Woods Hole, MA.USA.
4	Mr H.W.K.S.L. Kumara Research Assistant/MPhil Student, Department of Agricultural Biology, Faculty of Agriculture, University of Ruhuna,	NSF Training Scholarship	Training with the Bacteriology Group, 15th May - 15th August 2014, ICGEB, Trieste, Italy.
5	Ms P.D.N.N. Sirisena PhD Student, Department of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya.	NSF Training Scholarship	Dengue virus dynamics/genetic changes in the vector mosquitoes and Dengue Fever (DF), Dengue Haemorrhagic Fever (DHF) and geo- climatic factors that predict clinical severity of DF/DHF outbreaks, 20th May - 04th July 2014, University of North Carolina, USA
6	Ms E.U.U. Rathnathunga Research Assistant/Ph.D. Student, Department of Agricultural Biology, Faculty of Agriculture, University of Ruhuna.	NSF Training Scholarship	Theoretical and practical Course - "Bioinformatics: Computer Methods in Molecular and Systems Biology", 23rd - 28th June 2014, ICGEB, Trieste, Italy
7	Mr A.C.P. Priyankara System Engineer Faculty of Agriculture, University of Ruhuna.	NSF Training Scholarship	5th Training course on Geological Mapping Capacity Building for ASEAN Member States & the 4th International Workshop on Digital Geological Mapping System, 04 - 26 Aug. 2014, China Geological Survey of the Ministry of Land and Resources, CCOPTS and Yunnan Information Center of Geology & Mineral Resources, China
8	Dr P.H.K.I.S. Ranasinghe Senior Lecturer, Department of Parasitology, Faculty of Medical Sciences, University of Sri Jayawardenapura, Nugegoda.	NSF Training Scholarship	Welcome Trust Advanced Course : Working with Parasite Database Resources, 19th - 24th Oct. 2014, Welcome Trust Genome Campus, Cambridge, UK

9	T.D.C.M.K. Wijayasiriwardena Principal Research Scientist, Industrial Technology Institute, 363, Bauddhaloka Mawatha, Colombo 7.	NSF Travelling Fellowship	Workshop on “Research Development and Regulation of Herbal Medicines of the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC) member Countries”, 24th - 25th July 2014, Thailand Institute of Scientific and Technological Research , Bangkok, Thailand.
10	Ms A.M.M.H. Athapaththu Research Scientist, Industrial Technology Institute, Bauddhaloka Mawatha, Colombo 07.	NSF Training Scholarship	Workshop on “Biotechnology Aspects of Monoclonal Antibodies Production and Engineering”, 09th - 22nd Aug. 2014, Cairo University, Egypt
11	Prof. M. Gunatilake Associate Professor, Dept. of Physiology, Faculty of Medicine, University of Colombo, Colombo 08.	NSF Travelling Fellowship	Comprehensive training on Zebra fish husbandry and zebra fish embryo as a toxicity testing model, 08th - 19th Sept. 2014, University of Antwerp, Belgium.
12	Ms. W.J. Nimanthika Research Officer and Head (Weed Science), National Plant Quarantine Service, Canada Friendship Road, Katunayake.	NSF Training Scholarship	AMIGA Summer School on the Risk Assessment of GM crops, 2014, 02nd – 05th Sep. 2014, Teagasc at the Dept. Crop Science, Oak Park Carlow, Ireland.
13	Dr P.N.R.J. Amunugoda Research Scientist, Industrial Technology Institute, Bauddhaloka Mawatha., Colombo 07.	NSF Travelling Fellowship	International Workshop on Industrial and Commercial Development of Non-Timber-Forest-Products (NTFPs) in a sustainable context, 25th Aug – 13th Sep. 2014, Hangzhou, China.
14	Ms N.V.T. Jayaprada Research Assistant, Department of Agricultural Biology, Faculty of Agriculture, University of Ruhuna.	NSF Training Scholarship	Genetic Improvement of Anthurium for novel flower colour, early flowering and potted plant structure, 01st November 2014 - 1st November 2015, Kagawa University, Japan.
15	Ms V.K. Gunathilaka Probationary Lecturer in Zoology, Faculty of Applied Sciences, University of Sri Jayawardenepura, Nugegoda.	NSF Training Scholarship	Laboratory of Marine Zoology, Department of Science of the Earth, the Environmental and the Life, 1st - 31st October 2014, University of Genova, Italy.
16	Ms D.D.P.P. Jayarathna Research Student (MPhil/PhD), Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB), University of Colombo.	NSF Training Scholarship	Compound isolation using High Field (600 MHz), NMR spectroscopic data, 11th Jan. – 11th March 2015, H.E.J. Research Institute of Chemistry, University of Karachchi, Pakistan

## Sponsorships for Scientific Meetings and Training Programs 2014

	Sponsorship	Organization	Category	Amount
1	Inaugural Scientific Conference of the Sri Lanka Association for Laboratory Animal Science (SLALAS) and Post Conference Workshop on Alternatives	Sri Lanka Association for Laboratory Animal Science (SLALAS)	Medical Sciences - (Laboratory Animal Science)	100,000
2	17 <sup>th</sup> Annual Scientific Congress of Sri Lanka College of Pediatricians	Sri Lanka College of Pediatricians	Medical Sciences ( child health care)	1,000,000
3	AAPIAP (Assembly of Asia Pacific International Academy of Pathology) Diagnostic Update and Junior Academy and Annual Academic Sessions 2014 of the College of Pathologists of Sri Lanka (CPSL)	College of Pathologists of Sri Lanka	Medical Sciences (Pathology)	200,000
4	1 <sup>st</sup> International Symposium on Traditional Medicines	Gampaha Wickramarachchi Ayurveda Institute	Ayurvedic and Indigenous Medicine	200,000
5	7 <sup>th</sup> Biennial Scientific Sessions of the Allergy and Immunology Society of Sri Lanka (ALSSL)	Department of Zoology, Faculty of Medicine, University of Colombo	Medical sciences (Allergy and Immunology)	344,300
6	Haemlcon 2014	Sri Lanka College of Hematologists, No 6, Wijerama Mawatha, Colombo 07	Medical Sciences (Hematology)	150,000
7	Clinical Practice and Research Ethic Course	Sri lanka Medical association, Wijerama Mawatha, Colombo 07	Medical Sciences	367,800
8	Workshop on Pharmaceutical Sciences	Department of Chemistry, University of Colombo, Colombo	Pharmaceutical Sciences	200,000
9	2 <sup>nd</sup> Scientific Sessions of Sri Lanka Association for Laboratory Animal Science 2014	Sri Lanka Association for Laboratory Animal Science (SLALAS),	Medical Sciences	400,000
10	Conference on Statistics and Society in the New Information Age: Challenges and Opportunities	Institute of Applied Statistics, Sri Lanka (IASSL)	Statistics	1,000,000
11	Study Group Meeting on Mathematics and Statistics for Industry (SGMMSI-2014)	Department of Mathematics, University of Ruhuna, Matara	Mathematics and Statistics	94,000
12	International Forum for Mathematical Modeling 2014- Colombo (IFMM-2014)	Research and Development Center for Mathematical Modeling, Department of Mathematics, University of Colombo	Mathematics	80,000

13	5 <sup>th</sup> International Conference on Sustainable Built Environment - ICSBE-2014	Department of Civil Engineering, Faculty of Engineering, University of Peradeniya	Engineering	200,000
14	4 <sup>th</sup> Workshop on Thin Film Solar Cells and Their Science and Technology	Postgraduate Institute of Science, University of Peradeniya	Engineering	200,000
15	Second International Conference on Frontiers in Molecular Life Sciences: Pathway to Knowledge Hub	Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo	Biochemistry, Molecular Biology and Biotechnology	1,000,000
16	Chemical Education & Research for Industrial Development & Sustainable Growth in Knowledge based Economy.	College of Chemical Sciences, Institute of Chemistry Ceylon, Ragjagiriya	Chemistry	100,000
17	National Workshop on DNA Barcoding Applications and Field/ Laboratory Protocols	Coconut Research Institute, Lunuwila	Biochemistry, Molecular Biology and Biotechnology	15,000
18	The Third National Conference on Technology and Management NCTM 2014	Sri Lanka Institute of Information Technology (SLIIT)	IT	100,000
19	3rd International Symposium on Water Quality and Human Health: Challenges Ahead	Postgraduate Institute of Science, University of Peradeniya	Water security	81,000
20	International Postharvest Research Symposium (IPRS) -2014 and Postharvest Machinery and Equipment Exhibition	Research and Development Center, Institute of Postharvest Technology, Jayanthi Mawatha, Anuradhapura	Postharvest Technologies (food and nutrition, fresh product quality and safety, handling packaging and storage of food crops, food process engineering and design of postharvest machinery)	200,000
21	19 <sup>th</sup> International Forestry and Environment Symposium 2014	Department of Forestry and Environmental Science, Faculty of Applied Science, University of Sri Jayewardenepura, Gangodawila, Nugegoda	Forestry and Environmental Science	24,000
22	7 <sup>th</sup> Annual research conference , Royal Asiatic Society of Sri Lanka	Royal Asiatic Society of Sri Lanka, 96, Ananda Coomaraswamy Mw, Colombo 7	History- (History, religions, languages, literature, arts, sciences and social conditions of Sri Lanka)	200,000
23	34 <sup>th</sup> Annual Sessions of the Institute of Biology (IOB)	Institute of Biology, 'Vidya Mandiraya', 120/10, Wijerama Road, Colombo 07	Science	188,000
24	70 <sup>th</sup> Annual Sessions of the Sri Lanka Association for the Advancement of Science (SLAAS)	SLAAS	Science	1,000,000

25	SLAYS-IFS Joint Symposium-Driving Research Towards Economy: Opportunities and Challenges	Institute of Fundamental Studies (IFS), Hantane Road, Kandy	Science	150,000
26	2nd Ruhuna International Science and Technology Conference 2015 (RISTCON 2015)	Department of Botany, University of Ruhuna	Science and Technology	110,000
27	Travel Grant given to Represents of SLAAS at the 101st Indian Science Congress - February 2014	SLAAS	Dissemination of novel scientific findings	157,260
28	Travel Grant given to Represents of SLAAS at the 102nd Indian Science Congress - February 2015	SLAAS	Dissemination of novel scientific findings	97,790
29	Travel Grant to Attend the 32nd International Conference on Lightning Protection (ICLP 2014)	Dr C. Mahesh Edirisinghe, Member/ Board of Management, NSF	Dissemination of novel scientific findings	620,406

## NSF Staff training Training Local

Name of the Employee	Title of the Programme	Period
Miss T D P P Samaranayake Mrs Priyanka Bamunendra Mr. Yohan Chandeeera Mrs H Siriwardhana Mrs N S Liyanage Mrs Uthpala Ranaweera Mrs Prishanthi Miss Isuri Wimalarathna Miss Manori Pathirana Mr E M D C B Ekanayake Mr. E M W W L B Ekanayake Mrs Srimathi Liyanage	New Accounting Standards	06.02.2014
Miss Sammani Weerasinghe Miss Priyanka Bamunendra	Workshop on submission of Employers contribution details	19.03.2014
Mrs Thilina Kandanamulla	Postgraduate Diploma in International Relations ( week end )	One year programme Commenced on 22.03.2014
Group training for All Staff	Workshop on Filing procedure ( 95 staff members have been participated)	27.03.2014
Ms. Nasheera Paranamana	Collaborative International Workshop on Reduction of Post Harvest Losses	17 <sup>th</sup> - 20 <sup>th</sup> March, 2014
Ms Chamarika Samarasinghe	Interpersonal Relations & Public Relations	01.04. 2014
Mr K G J Karunasena Mr. D M Dilan Rasika	Workshop on Wealth Creation Through Innovations	23 <sup>rd</sup> & 24 <sup>th</sup> May, 2014 (½ day)
All Staff	Outbound Training Programme ( 75 staff members participated for the above programme)	25 <sup>th</sup> – 27 <sup>th</sup> April, 2014
Mrs D M N Prishanthi Mrs Uthpala Medhavi	Accounts Procedure	23.06.2014
Mrs Priyanka Bamunendra Miss Sammani Weerasinghe Mrs Anjalee Perera	Cash Management & Cash Flow Control	30.06.2014
Mr. I W Saman Sujeewa	Workshop on Transport Management	26.06.2014
Miss I T Edirisinghe	Workshop on Telephone Etiquette	09.07.2014
Mrs. H A U Amarasinghe	Workshop on Productivity Leverage in Public Sector to Achieve National Growth	23.07.2014
Mr M M C Perera Miss Dilukshi Keeragala	Skills Development Workshop for PL Grade employees	25.07.2014
Mr. Asanga Ahangama	Workshop on Electronic Resource Management (PGIM)	2 <sup>nd</sup> & 3 <sup>rd</sup> July, 2014

<b>Mr. S N P K Sapumohotti</b>	Training Programme on – Contract payments, Files Maintenance & Contract Close out Activities	01.08.2014
<b>Group Training for JM &amp; Above grades</b>	Workshop on Public Procurement (67 staff members have been participated)	18.08.2014
<b>Mr. R P C Janaka Perera Mr Nuwan Warusapperuma Mrs Nadeesha S Dissanayake</b>	Workshop for Office Aide & Drivers	25.08.2014
<b>Mr. H P L Caldera Mr B Suranga Cooray Mr. Nuwan Warusapperuma</b>	Workshop on General Computer Awareness for PL Grade Staff	15.08.2014
<b>Group Training</b>	P T Session	Commenced on 03.10.2014
<b>Group Training</b>	Workshop on Procurement ( II )	30.09.2014 & 01.10.2014
<b>Mr P D G Muditha Miss K D N Keergala Mrs D M N S Dissanayake Mr. Janaka Perera Mr. Ranil Kumara Mr. Dhanushka Zoysa Mr Sanjaya Amarathunga</b>	Computer Training programme	24.09.2014
<b>Mrs G G Kusumalatha</b>	Holidays & leave & Statutory Rebate procedure	23.10.2014
<b>Mrs M Sadhari Dematagolla</b>	Telephone Skills & Etiquette Training	25.09.2014
<b>Mr Asanga Ahangama</b>	Workshop on Inter Library In Loan Service	14.10.2014
<b>Group Training for All Staff</b>	Workshop on Presentation Skills (67 staff members have been participated)	11.12.2014
<b>Mrs Jesika N Silva</b>	Advance Certificate in Secretarial Practices	6 months training programme commencing from 22.11.2014
<b>Mr. Pujitha D Hewawasam Miss Shamila Mohamed</b>	Workshop on “Quality Management for Libraries and Information Centres	25 <sup>th</sup> & 26 <sup>th</sup> November, 2014 , ITI main Auditorium
<b>Group Training for All Staff ( 70 staff members have been participated)</b>	Lecture on Non Communicable Diseases and Exercises	21.10.2014
<b>Group Training for All Staff (80 staff members participated)</b>	Workshop on Time Management for Better Productivity	13.11.2014

<b>Dr. S I Wickremasinghe</b> <b>Dr Thamara F Dias</b> <b>Mr. S M A W Anuruddha</b> <b>Mr. J Karunasena</b> <b>Dr. Gowry Moorthy</b> <b>Ms Dilani Jayaweera</b> <b>Ms. Sarani Meneripitiya</b> <b>Ms E krithombuge</b> <b>Ms S Karunarathne</b> <b>Ms T Kandanamulla</b> <b>Ms. M Senarathne</b> <b>Mr. Nilupa Rupasinghe</b> <b>Mr. Dilan Rasika</b> <b>Miss Dilushi Munasinghe</b>	The SLAAS Theme Seminar “ Engage Science Enrich Society”  ( 14 staff members have been participated )	02.12.2014
<b>Mr. P D Hewawasam</b>	NILIS Research Symposium 2014	21.11.2014 & 22.11.2014
<b>Mrs. Ruwanthi Ipalawaththa</b> <b>Ms Saroja Thilakarathne</b> <b>Ms. Sadhari Dematagolla</b> <b>Mrs Chamarika Samarasinghe</b> <b>Ms. Champika Priyadarshanie</b> <b>Mrs Ajantha Kanthi</b> <b>Miss N Paranavidhana</b> <b>Mrs Kanchana Sewwandhi</b> <b>Mrs Radeesha Millawithana</b> <b>Mrs Rukshani Pathirana</b> <b>Ms. Monika Wijemanne</b>	Professional Development of Development & Management Assistants	11.12.2014
<b>Ms. Hemamali Priyadarshani</b>	Seminar on Current Trends in the Dewey Desimal Classification System	09.12.2014
<b>Mrs Subhani De Silva</b> <b>Mrs. T Kandanamulla</b>	Workshop on Skills for Work Life	16.12.2014
<b>Group Training Workshop on Presentation Skills ( 67 staff members participated)</b>	Workshop on Presentation Skills	11.12.2014
<b>Maduka Senarathne</b> <b>Dilan Rasika</b> <b>Jithya Wijesinghe</b> <b>Nilupa Ruapasinghe</b> <b>Shashikala Karunarathne</b>	Activity day for Scientists conducted by NASTEC	18.12.2014

## NSF Staff training Training Foreign

Name of the Officer	Title of the Training Programme	Country , Duration
<b>Mrs W M U K Rathnayake</b>	NISTEP/GRIPS Fellowship Programme: Spring Short Course for Science, Technology and Innovation Policy	Tokyo , Japan, 09 <sup>th</sup> February, 2014 – 15 <sup>th</sup> February,2014
<b>Mrs Chamika Dharmasena</b>	NISTEP/GRIPS Fellowship Programme: Spring Short Course for Science, Technology and Innovation Policy	Tokyo , Japan, 09 <sup>th</sup> February, 2014 – 15 <sup>th</sup> February, 2014
<b>Mr H M M Perera</b>	Web Radio Programme, organized by the Commonwealth Education Media Centre (CEMCA)	Noida, India 25 <sup>th</sup> March, 2014 - 29 <sup>th</sup> March, 2014
<b>Dr P R M P Dilrukshi</b>	Australian Award Fellowship for training programme on “Development Report Writing and Publication Skills	Monash University, Australia 28 <sup>th</sup> August, 2014 - 8 <sup>th</sup> November, 2014
<b>Dr. S A V Moorthy</b>	Australian Award Fellowship for training programme on “Development Report writing and Publication Skills	Monash University, Australia 28 <sup>th</sup> August, 2014 - 8 <sup>th</sup> November, 2014
<b>Mrs. D N Wickremarachi</b>	WIPO Regional Seminar on Intellectual Property Technology Transfer and Commercialization, Singapore	Singapore, 26 <sup>th</sup> August, 2014 - 29 <sup>th</sup> August, 2014
<b>Dr Seetha I Wickremasinghe</b>	ICSSR/IDRC – NRCT Workshop to Institutionalize a Social Science Research Network for Asia, Thailand	Bangkok, Thailand 18 <sup>th</sup> September,2014 – 21 <sup>st</sup> September, 2014

## Participation of NSF staff at Conferences / Meetings /Lectures (Foreign &amp; Local) - 2014

Name of the Officer	Title of the Training Programme	Country , Duration
<b>Mrs H A U Amarasinghe</b>	International Advisory Committee for Biosphere Reserves ( IACBR)	France 17 <sup>th</sup> - 20 <sup>th</sup> March, 2014
<b>Dr P R M P Dilrukshi</b>	ICSSR_ IDRC Conference on the status and Role of Social Science Research	New Delhi, India 12 <sup>th</sup> March, 2014 - 16 <sup>th</sup> March, 2014
<b>Mrs P A S F Perera</b>	COAR , Open AIRE, Conference, 2014 “Open Access Movement to Reality”	Athens, Greece 19 <sup>th</sup> May, 2014 - 24 <sup>th</sup> May, 2014,
<b>Mrs H A U Amarasinghe</b>	International Science & Engineering Fair	United States of America 9 <sup>th</sup> - 19 <sup>th</sup> May, 2014
<b>Mrs W L C Dasanayake</b>	6th meeting of the South and Central Asia MAB Network ( SACAM)	Pakistan 2 <sup>nd</sup> December, 2014 - 6 <sup>th</sup> December, 2014
<b>Dr C G Yapa</b>	Global Research Council, Asia Pacific Regional Meeting	Singapore 2 <sup>nd</sup> December, 2014 - 5 <sup>th</sup> December, 2015
<b>Mr. S N P K Sapumohotti</b>	Guest lecture on Conformity Assessment & Accreditation of Inspection Bodies	10 <sup>th</sup> February 2014

## Principal Staff – Year 2014

**Chairman**

Prof. W L Sumathipala, *PhD, FIP, CPhys*

**Director General**

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

**Acting Director General**

Ms P A S F Perera, *B.Sc. (Colombo), M.Sc. (UK)* (w.e.f. 14.10.2014)

**Additional Director**

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

**Research Division**

Dr C G Yapa, <i>B.Sc. Special (Hons), (Colombo), Ph.D. (Colombo)</i>	Head/Principal Scientific Officer	
Dr S A V Moorthy, <i>B.Sc. (Jaffna), M.Sc. (Colombo), Ph.D. (Colombo)</i>	Senior Scientific Officer	
Dr. P V S Panawala, <i>B.V.Sc. (Peradeniya), M.Phil. (Peradeniya)</i>	Scientific Officer	
Ms W L C Dasanayake, <i>B.Sc. Agric. (Hons) (Peradeniya), M.Sc. (Peradeniya), M.Sc. (Japan), M.Eng (Germany)</i>	Scientific Officer	
Ms Amali Ranasinghe, <i>B.Sc. (Hons) (Bangalore), M.Sc. (Peradeniya)</i>	Scientific Officer	
Ms Nasheera Paranamana, <i>B.Sc. Agric. (Hons) (Ruhuna)</i>	Scientific Officer	(Up to 06.08.2014)
Ms M N S Jayaweera, <i>B.Sc. Agric (Hons) (Peradeniya), M.Sc. (Food &amp; Nutrition)(Peradeniya)</i>	Scientific Officer	(Up to 06.09.2014)
Ms Sarani K Meneripitiya, <i>B.Sc Special (Hons.) (Kelaniya)</i>	Scientific Officer	(w.e.f 11.09.2014)
Ms Oshini Sarangi Perera, <i>B.Sc Special (Hons.), (Uwa Wellassa)</i>	Scientific Officer	(Up to 28.08.2014)

**Science and Technology Policy Research Division**

Dr Seetha I Wickremasinghe, <i>B.Sc. Special (Hons) (Peradeniya), M.Sc. (Agric.) (Peradeniya), Ph.D. (JNU, New Delhi)</i>	Head	( Up to 17.07.2014)
Dr P R M P Dilrukshi, <i>B.Sc. Special (Hons) (Peradeniya), Ph.D. (Peradeniya)</i>	Acting Head Senior Scientific Officer	(w.e.f. 18.07.2014)
Ms Chamika Dharmasena, <i>B.Sc. Special (Hons) (Colombo)</i>	Scientific Officer	
W M U K Rathnayake, <i>B.Sc. Special (Hons) (Wayamba)</i>	Scientific Officer	
Ms U Y I L Dharmasoma, <i>B.Sc. Special (Hons) (Sri Jayawardenapura)</i>	Scientific Officer	(Up to 24.12.2014)

**International Liaison Division**

Mr S M A W Anuruddha, <i>B.Sc. (Hons) (Colombo), M.Sc. (Colombo)</i>	Head Principal Scientific Officer	(w.e.f. 17.03.2014)
Ms E M D C K Ekanayake, <i>B.Sc. Agric.(Hons) (Peradeniya), M.Sc. (Peradeniya)</i>	Scientific Officer	
Ms A M N S Nadugala, <i>B.Sc. Agric.(Hons) (Peradeniya), M.Sc. (Asian Institute of Technology)</i>	Scientific Officer	
Ms K A T K G Kandanamulla, <i>B.Sc. Agric.(Hons) (Ruhuna), M.Sc. (Colombo)</i>	Scientific Officer	
Ms W A U I Weerakkody <i>B.Sc (Hons.) (Colombo), M.Sc. (Keele)</i>	Scientific Officer	(Up to 08.10.2014 )

**Technology Division**

Dr T F Dias, *M.Sc. (Hons) (Moscow), Ph.D. (Moscow)* Head/Senior Scientific Officer

Mr J G Shanthasiri, <i>B.Sc. (Hons) (Colombo), M.Sc. (Kelaniya)</i>	Senior Scientific Officer	
Ms D N Wickramarachchi, <i>B.Sc. (Hons) (The Open University), M.Sc. (Sri Jayawardenepura)</i>	Senior Scientific Officer	(w.e.f 21.07.2014)
Ms P S Warakagoda, <i>B.Sc (Agric.) (Hons) (Ruhuna), M.Phil. (Ruhuna)</i>	Scientific Officer	
Miss S T Gonapinuwala, <i>B.Sc Special (Hons.) (Wayamba) M.Sc (Peradeniya)</i>	Scientific Officer	(w.e.f 12.05.2014)

#### Science Popularization Division (SPD)

Mr K G Janaka Karunasena, <i>B.Sc. Agric. (Hons)(Peradeniya), M.Phil. (Agric.) (Peradeniya)</i>	Head Senior Scientific Officer	(w.e.f 17.03.2014)
Ms M D Senarathne, <i>Graduateship in Chemistry (I. Chem.)</i>	Scientific Officer	
Mr D M Dilan Rasika, <i>B.Sc. Special (Agric.) (Hons) (Peradeniya)</i>	Scientific Officer	
Ms Jithya N Wijesinghe, <i>B.Sc Special (Hons.), (Sri Jayawardenepura)</i>	Scientific Officer	
Mr K H N D Rupasinghe, <i>B.Sc (Hons.) (Uni. of Peradeniya)</i>	Scientific Officer	(w.e.f 23.06.2014)

#### Journal Publication Unit

Ms Uthpala Karunarathne, <i>B.Sc. Special (Hons) (Kelaniya)</i>	Scientific Officer	
Ms R A A R Ranatunga, <i>B.Sc. Special (Hons) (Colombo)</i>	Scientific Officer	
Dr. H I Sandanayake, <i>B.V.Sc. (Peradeniya)</i>	Scientific Officer	
Mrs S Samarasekera, <i>B.Sc Special (Hons.) (Sri Jayawardenepura) B.Sc (Economic &amp; Mgt.) (Uni. of London)</i>	Scientific Officer	(w.e.f.16.06.2014)

#### Chairman's Office

Mr A U B Weerakoon, <i>B.Sc Special (Hons) (Peradeniya)</i>	Scientific Officer	(Up to 02.06.2014)
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#### Director's Office

Ms M.A.D.D. Munasinghe, <i>B.Sc. Special (Agric.) (Hons) (Peradeniya)</i>	Scientific Officer	
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#### National Science Library and Resource Centre (NSLRC)

Ms P A S F Perera, <i>B.Sc. (Colombo), M.Sc. (UK)</i>	Head/ Principal Information Officer	
Ms V N Perera, <i>B.Sc. (Open University), ASLLA</i>	Information Officer	
Ms A Tennakoon, <i>B.Sc. (Kelaniya)</i>	Information Officer	
Ms R P Sugathadasa, <i>B.Sc. (Sri Jayawardenepura)</i>	Information Officer	
Ms Jayanthi Weerathunga, <i>ASLLA</i>	Information Officer	(Up to 20.06.2014)
Ms K A Aruny Jayathissa, <i>B.Sc (Hons) (Peradeniya)</i>	Information Officer	(Up to 01.05.2014)
Mr Pujitha D Hewawasam, <i>B.Com (Swinburn University)</i>	Information Officer	(w.e.f. 01.08.2014)
Ms. M Niyas Thasneem, <i>B.Sc (Southern University)</i>	Information Officer	(w.e.f 01.08.2014)

#### Printing Unit

Mr. K P Senanayake	Printing Manager	
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#### Administration Division

Mr P Sapumohotty, <i>B.Sc. (Peradeniya)</i>	Senior Administrative Officer	
Ms W S M De Silva, <i>BBA (Hons) (Ruhuna)</i>	Human Resource Development Officer	
Ms B T Wickremasinghe, <i>B.Sc. (Sri Jayawardenepura)</i>	Procurement & Transport Officer	( w.e.f 21.07.2014)

**Finance Division**Ms T D P P Samaranyake, *Professional Part II of ICASL*

Senior Accountant

Ms E M P Bamunendra, *B.Com. (Sri Jayawardenepura)*Accountant  
Licentiate Certificate of ICASL**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*

IT Manager

**Confidential Secretaries**

Ms Ayomi Palihawadana

(Chairman's Office)

Ms Sobitha Wijenayake, *B.Com (Sp.) (Sri Jayawardenepura)*

(Director General's Office)

**Recruitment during the year 2014**

Ten ( 10 ) employees have been recruited to permanent cadre of NSF

(Scientific Officers – 04, Information Officers – 02 , Management Assistants – 03 , Office Aide – 01)

**Resigned during the year 2014**

Ms Charitha Senevirathne

Management Assistant on 01.03.2014

Mr M A Lankathilaka

Scientific Officer on 01.04.2014

Ms Shama Vithanage

Management Assistant on 01.05.2014

Ms. K A A Jayathissa

Information Officer on 01.05.2014

Mr A U B Weerakoon

Scientific Officer on 03.06.2014

Ms R N K Ramadeniya

Graphic Design Assistant on 30.07.2014

Ms Nasheera Paranamana

Scientific Officer on 07.08.2014

Ms Oshini S Perera

Scientific Officer on 28.08.2014

Ms Nadeera Jayaweera

Scientific Officer on 06.09.2014

Mrs Udeshika Weerakkody

Scientific Officer on 09.10.2014

Ms. Manori W Pathirana

Management Assistant on 04.12.2014

Mrs U Y I L Dharmasoma

Scientific Officer on 24.12.2014

**Retired Employees**

Mrs J Weerathunga

Information Officer on 20.06.2014



