# **National Science and Technology Commission**



# **Annual Report 2013**



National Science and Technology Commission
No. 31/9, 31/10, Dudly Senanayake Mawatha, Colombo 08
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# **About Us**

The National Science and Technology Commission (NASTEC) was established by the Science and Technology Development Act No. 11 of 1994 and came into operation in August 1998. It was formally inaugurated on 06 December 1998 and became a functional Commission in January 1999.

NASTEC has been designated as the apex policy formulating and advisory body on Science and Technology matters to the Government of Sri Lanka. The Commission comprised of seven members and they are appointed by H.E. the President of the Democratic Socialist Republic of Sri Lanka.

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# **Annual Report 2013**

A publication of the Secretariat
of the
National Science and Technology Commission (NASTEC)

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Edited by : Dr. Muditha Liyanagedara

National Science and Technology Commission 31/9,31/10, Dudley Senanayaka Mawatha Colombo 08

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# **Vision and Mission**

# **Our Vision**

"To be an excellent advisory body to the Government on the potential and use of Science and Technology to enhance the well-being and prosperity of the people of Sri Lanka"

# **Our Mission**

"To furnish the Government with policies, strategies and plans to build high national capabilities in Science and Technology, for application for sustainable development"

# Chairman's Message



It is with pleasure that I write this message to the Annual Report of the Science and Technology Commission (NASTEC) as it's newly appointed Chairman. Positions of the Chairman and the other Commission members of the NASTEC which had been vacant since 2012 have been filled by His Excellency the President with effect from 22<sup>nd</sup> April 2013 on the request of the Hon. Minster of Technology and Research, Patali Champika Ranawaka. The new Commission met for the first time on 7<sup>th</sup> May and commenced its program of activities. The work of the office of the Commission has been well looked after by Dr. Muditha Liyanagedera in his capacity as the Acting

Director until the appointment of the new Commission, and his efforts in this regard are gratefully acknowledged.

Continuing its statuary duties, NASTEC this year also involved in the evaluation of S & T Institutes of the country, preparation of status report of Science and Technology of the country for the year 2012, functioning as the National Focal Point of the Centre for Science and Technology of the Non-Aligned and other Developing Countries (NAM S&T Centre) and carrying out other relevant activities assigned to the NASTEC by the Hon. Minister of Technology and Research.

During the year 2013 NASTEC commenced reviewing of the Institute of Fundamental Studies (IFS), Industrial Technology Institute (ITI), National Engineering Research and Development Centre (NERDC) and National Science Foundation (NSF). By the end of the year, review of the IFS has been fully completed and the draft review reports of another institutes was completed by the review team and have been sent for the institute for factual verification and for their comments. Other Two Reports have been awaited by the end of the year.

The Office of the Commission has been successful in completing the S and T Status Review Report of the country for the year 2011 and submitted it to the Ministry. Compilation of the S & T Status report for the year 2012 was assigned to Prof. C.P. Abeyratne, Associate Professor in the Department Physics of the University Sri Jayewardenepura as an assignment and she has completed collection of preliminary data and preparation of the first draft of the report during this year. In the latter part of the year the draft has been circulated among various S and T institutes for their views and comments.

The Commission continued to play its role as the Focal Point of NAM S and T Centre and has been successful in coordinating the provision of valuable training in the S and T related fields.

In addition to the routine work of the Commission, the Ministry of Technology and Research assigned several tasks to be fulfilled by the NASTEC. Some such tasks assigned and successfully carried out are formulation of funding criteria for pure and applied research and distinguishing between types of research funding that should be provided by National Science Foundation (NSF) and National Research Council (NRC) avoiding duplication. NASTEC in collaboration with the Ministry of Technology and Research was also successful in identifying several focus areas for which S and T interventions are needed in solving problems and issues associated with them through a series of participatory workshops and brainstorming sessions. This initial work has laid foundation to the formulation of comprehensive investment plan for S and T research and development activities of the country.

This year also the Young Scientist's Forum of the NASTEC has been active as in the past years. It has been successful in carrying out several outreached programmes in relation to capacity building of junior scientists scattered in various parts of the country.

NASTEC has been facing with numerous problems due to the difficulty in recruiting the scientific staff especially at senior level. In spite of these problems the Commission continued to perform its tasks successfully beyond expectations mainly due to the dedication and commitment of its staff.

Prof. Dhammika Tantrigoda Chairman

# Director's Message



It is with pleasure I add this message to the 2013 Annual Report of NASTEC. Year 2013 was a productive year for NASTEC compared to the last two years. A new Commission has been appointed this year after the expiration of the tenure of the previous commission in 2012. The post of Director which had been vacant since 2010 has been filled after appointing the new commission.

Despite the shortage of scientific staff, NASTEC was able to review all four institutions scheduled to be reviewed during this year and conducted National S&T Status review 2012 as well. In the meantime NASTEC also started preparatory work for the Seventh

Biennial Conference on S&T (BICOST –VII) scheduled to be held in 2014.

As far as the status of S&T in the country is concerned, Sri Lanka cannot be proud of its scientific achievements during the recent past. Inability to fill scientist cadres due to non-attractive salaries and perks, not having an efficient procurement procedure that suit for scientific research, not having initiatives for research commercialization are some of the reasons why we do not have satisfactory scientific achievements.

Further depletion of S&T capacity of the country is inevitable if no measures have been taken at the policy level to nourish the S&T body of this country.

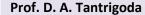
S&T cannot be isolated from the mainstream Economic development strategy. What is more important for a sustainable economic development is the country's capacity to produce scientifically advanced goods and services than its capacity to purchase them from other countries. NASTEC is ready to contribute to a mission of scientifically advanced nation through policy inputs if such mission is politically committed.

I take this opportunity to express my sincere appreciation to the minuscule staff of NASTEC for it's continuous support to accomplish the goals of the year.

Dr. Muditha Liyanagedara Director/CEO

# **Commission Members**





#### Chairman

Chair and Senior Professor of Physics, University of Sri Jayewardenepura (2004 to present); Professor of Physics, University of Sri Jayawardanepura (1996–2004); Technical Consultant, Petroleum Resources Development Secretariat (2012); Lead Consultant, Policy and Strategy unit, Ministry of Higher education (2007 – 2008); Visiting Research Fellow, University of Edinburg (1993 – 1994).



#### Prof. R.T. Cumaranatunga

Senior Professor & Professor of Fisheries Biology / Dept. of Fisheries & Aquaculture, Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna (2007 to date); Founder Dean/Faculty of Fisheries and Marine Sciences & Technology (2005 to 2008); Head/Dept. of Fisheries Biology. Faculty of Science, University of Ruhuna (1990-2005)

Positions hold in Sri Lanka Association for the Advancement of Science (SLAAS)

- o General President (2013),
- o Governing Council Member (2003, 2004, 2006, 2007, 2010, 2011)
- o Section D (Natural Sciences) President (2003), Vice-president (2002), Secretary (2000) Committee member (1998 to 2004).
- o CPS –Chairperson (2005), Committee member (2003-2008, 2011)
- o Science Education Committee-Chairperson (2011)

#### Mr. P. D. Fernando

Director General of Commerce, Ministry of Industry and Commerce (2012 - 2013); Consulate General of Sri Lanka, Australia (2009); Director- Head of Trade Promotion, Ministry of Export Development and International Trade (2007-2009); Consulate General of Sri Lanka, Dubai (2004-2007); Consulate General of Sri Lanka, Karachchi (2004-2002); Deputy Director of Commerce, Ministry of Trade and Commerce (2001); Permanent Representative to EC Brussels(1998-2001); Consular, Commercial section, Sri Lanka Embassy, Germany (1992 – 1995); First Secretary (Commerce & Economic), Sri Lanka Embassy, Japan (1987-1989); Trade Commissioner for Sri Lanka, Pakistan (1982-1985); Assistant Director Commerce, Ministry of Trade & Shipping (1979-1982) Assistant Secretary of the Trade Union of Unified Customs Officers (1978);



#### Prof. A.A.P.S. Manamperi

Senior Lecturer, Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya . Consultant Molecular Biologist, Durdans Hospital (2007 to date);Consultant Technical Assessor, SLAB (2008 to date);Tutor/Demonstrator, University of Kelaniya(1997-1998); Research Assistant, University of Colombo (1998)



#### Dr. B.M.S. Batagoda

Director General, Department of Public Enterprises, General Treasury, Ministry of Finance and Planning (2008 - to date); Chief Executive Officer, Project Management Bureau, General Treasury, Executive Officer, Sri Lanka Carbon Fund (2008 - to date); Director General, Operations and Review, General Treasury, (2007 - 2008); Team Leader and Consultant, Sri Lanka Carbon Finance Assistance Programme, World Bank (2004 - 2007); Director (Climate Change and Global Affairs), Ministry of Environment & Natural Resources (1998 – 2004); Assistant Secretary to His Excellency the President of Presidential Secretariat (1992-1994); Sri Lanka, Ministry of Plantation Industries (1987-1989); Assistant Director of Public Administration, Ministry of Public Administration (1986-1987).



# Dr. S.S. Namasivayam

Senior Lecturer, Faculty of Engineering, University of Moratuwa; Dean-New Invitees of ICFAI Education Lanka, Institute of Charted Financial Analysts of India (2008-2009); Director/CEO of Arthur C. Clarke Institute for Modern Technologies (2002-2007); Head of Electro Technology Unit, Industrial Technology Institute (1995 – 2000).



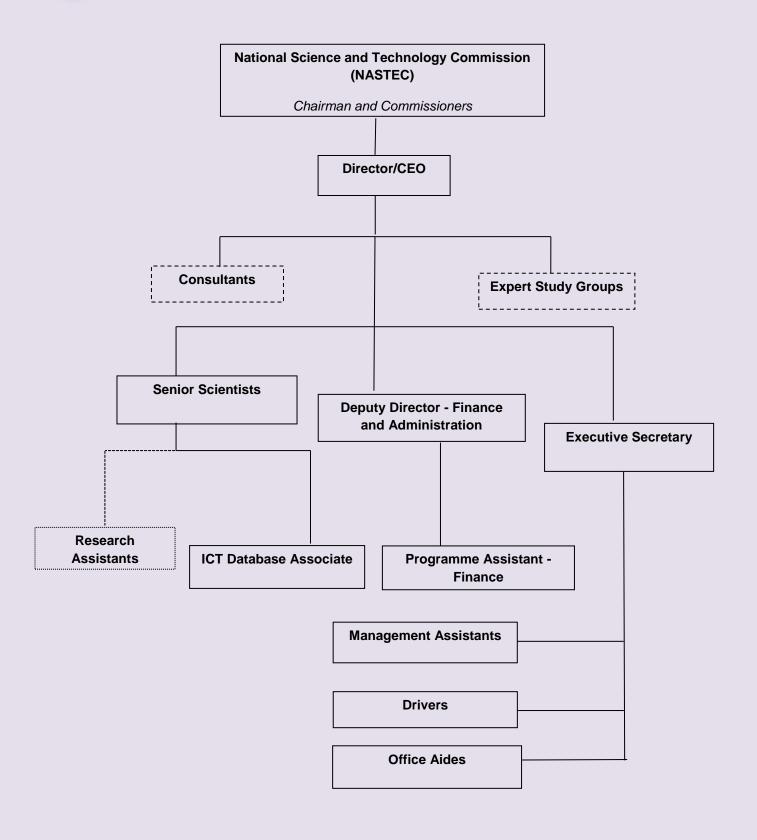
# Dr. J. Wattavidanage

Senior Lecturer in Zoology, The Open University; Chairman, National Committee on Science Popularization, National Science Foundation (2010); Member of the Science Center Technical Committee of NSF (2010); Chairman of the Environment Committee of the Sri Lanka Association for the Advancement of Science -SLAAS (2009); President of Section D (Life Science and Earth Sciences), SLAAS (2006); Member of the Wages Board for the Textile Manufacturing Trade, Ministry of Labor Relations and Foreign Employment (2005); General Secretary, SLAAS (2005); Member of the Governing Council of National Institute of Fisheries and Nautical Engineering (Sagara Vishwavidyalaya) (2004); Member of the Science Popularizing Committee of the NSF (2003); Chairman of the Science Popularizing Committee, SLAAS (2002).

# **Profile of the Organization**

- The Chairman heads the Commission.
- The Director is the Chief Executive Officer.
- The Senior Scientists facilitate and manage Study Groups and Consultative for that produce policies, plans and other S&T relevant documents.
- The Executive Secretary is the secretary to the Commission and also functions as the Office Manager.
- The Deputy Director (finance and Administration) manages all financial matters.
- Consultants and Research Assistants hired on need-basis carry out specialized tasks and assignments as required by the Commission.

# **Organizational Structure**



# Science and Technology Review

# Annual National Review of the Status of S & T in the Country

The Commission is mandated to submit a report annually to the Government, reviewing the Science and Technology (S&T) activities in Sri Lanka in the preceding year. Reviewing S&T status of a country annually is very useful for decision-making and policy formulation in the S&T sector.

NASTEC conducted a questionnaire survey in year 2013 using 26 research institutions in the country to obtain information relevant to year 2012. Based on the information received the report on "Science and Technology Status of Sri Lanka- 2012" was prepared.

This report covers the following main components:

- i) Human and physical resources at the S&T institutions
- ii) Effectiveness of public spending on S&T
- iii) Performance of S&T institutions
- iv) S&T activities of learned societies

NASTEC organized a meeting of directors of S&T institutions to discuss the draft report and to obtain their views/suggestions to improve the report on 20<sup>th</sup> December 2013. At that meeting few suggestions were made to improve the report.

With regard to the output of S&T institutions subjected to this review it has been found that the number of processes, technologies and products developed are 40, 65 and 44 respectively. Number of total publications amounted to 527 which include 77 publications in SCI journals and 69 publications in refereed journals. These institutions were also able to solicit three national patents and 17 national awards, six international patents and six international awards.

# **REVIEW OF S& T INSTITUTIONS**

Reviewing of S&T Institutions is another mandated task of NASTEC. In fulfilling this mandate, so far, ten institutional reviews have been successfully completed by NASTEC.

# Review of the Institute of Fundamental Studies



IFS submitted its Self-Assessment Report to NASTEC on 1<sup>st</sup> February 2013 and the following panel of reviewers was then appointed in agreement with the IFS.

#### **Panel of Reviewers**

 Prof. B.S.B. Karunarathne, Chairman and member(Director, Postgraduate Institute of Science)

#### Other Members

- Prof. Nimal Gunathilaka (Professor of Botany, Department of Botany, Faculty of Science, University of Peradeniya)
- Prof. Anura Wickremasinghe (Professor of Chemistry, Department of Chemistry, Faculty of Science, University of Peradeniya)
- Prof. Sisira Pinnawala (Professor of Sociology, Department of Sociology, Faculty of Arts, University of Peradeniya)
- Dr. Jagath Gunathilaka (Head, Department of Geology, Faculty of Science, University of Peradeniya)

The first meeting of the review panel was held on 8<sup>th</sup> February 2013 at the University of Peradeniya and the review plan was worked out at this meeting. The panel visited IFS on 8<sup>th</sup> and 15<sup>th</sup> March 2013 for the review. The panel also met the Board of Directors of the institute to collect information on the management aspects at the level of the Board. Finally the panel had a discussion with the stakeholders of IFS on 30<sup>th</sup> April, 2013.

The first draft of the review report was submitted to IFS on 28<sup>th</sup> June 2013 and it was slightly modified based on the comments made by the IFS. The IFS accepted the final review report submitted on 14<sup>th</sup> October 2013.

# Review of Industrial Technology Institute



After receiving the self-assessment report of ITI on 4<sup>th</sup> April 2013, NASTEC has appointed a review panel with the consent of ITI to review it. The members of the panel were;

Chairman - Prof. S. Widanapathirana (Department of Microbiology, Faculty of Science, University of Kelaniya)

#### Other Members

- Prof. K.K.D.S. Ranaweera (Director, Bandaranayake Memorial Ayurvedic Research Institute)
- o Prof. E. Dilip de Silva (Department of Chemistry, Faculty of Science, University of Colombo)
- o Mr. W. Madanayake (Former Director, Measurement Units, Standards and Services Department)
- o Mrs. Ramani Ellepola (Former Director General, Central Environmental Authority)

The panel visited ITI for the review on 2<sup>nd</sup> May, 13<sup>th</sup> June, 25<sup>th</sup> June and 25<sup>th</sup> July 2013. The panel also met the Board of Directors on 22<sup>nd</sup> May for their comments .The stakeholders' meeting was held on

25<sup>th</sup> July 2013 to obtain their views on ITI. The first draft of the review report was submitted to ITI on 11<sup>th</sup> October 2013 for its comments. The NASTEC is awaiting the comments to finalize the report.

# **Review of National Engineering Research and Development Center (NERDC)**



NERDC was the third institute that NASTEC reviewed in 2013. Upon receiving of the Self-Assessment report of the Center on 30<sup>th</sup> May 2013, a panel of experts was appointed by NASTEC. They are;

 Eng. S.A.K. Abayawardana - Chairman (Programme Director, Coordinating Secretariat for Science, Technology and Innovation)

#### Other members

- o Dr. Mervyn Gunasekara (Managing Director, LAN Management Development Service)
- Prof. Niranjanie Ratnayake (Senior Professor, Department of Civil Engineering, University of Moratuwa)
- Eng. Kamalanath Samarakoon (Senior Lecturer, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya)
- o Mr. Damian Weerakkody (Human Resource Manager, Tradesman SL (pvt) Ltd.)

The panel visited NERDC for the review on 25<sup>th</sup> June, 4<sup>th</sup> July, 9<sup>th</sup> July and 7<sup>th</sup> November 2013. The meeting of the stakeholders of the Center with the review panel members was held on 25<sup>th</sup> July 2013. The panel also met the Board of Directors of the Center on 8<sup>th</sup> July to collect information on the management aspects at the level of the Board. NASTEC has been awaiting the first draft of the report by the end of the year.

# National Science Foundation (NSF)



National Science Foundation has been the last institute reviewed in 2013. NSF submitted its Self-Assessment report to NASTEC on 1<sup>st</sup> June 2013. The review panel appointed to review the NSF consists of the following members.

 Prof. Narada Warnasuriya, Chairman (Former Vice Chancellor, University of Sri Jayewardenepura)

#### Other Members

- o Dr. N. P. Wijayananda (Former Chairman, Geological Survey and Mines Bureau)
- Prof. J. K. D. S. Jayanetti (Professor of Physics, Department of Physics, Faculty of Science, University of Colombo)
- Prof. Udith Jayasinghe (Senior Professor, Department of Agri-Business Management, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka)

First review visit to NSF was made on 1<sup>st</sup> August 2013 and then on 8<sup>th</sup> August and 30<sup>th</sup> October, 2013. The meeting between the review panel and the stakeholders of NSF was held on 10<sup>th</sup> October 2013. A meeting with the Board of Directors was also held on 10<sup>th</sup> October to gather more information on the management of NSF. NASTEC has been awaiting the first draft of the review report towards the end of the year.

# **International Relations**

# <u>Center for Science and Technology of the Non – Aligned and Other Developing Countries</u> (NAM S&T Centre)

The Centre for Science and Technology of the Non-Aligned and other Developing Countries (NAM S&T Centre) was set up in 1989 as an inter-governmental organization in pursuance of the decisions taken at various Summits of the Heads of State or Government of the Non-aligned Movement Countries. Forty-Four developing countries represented by their Government Departments/Ministries and Agencies dealing with Science and Technology have so far joined the Centre as its members. The National Science and Technology Commission is the Sri Lanka's national focal point of the NAM S&T Center.

NAM S&T Center provide opportunities to scientists and other officials to participate at workshops, seminars, conferences and other short-term and medium-term training programmes organized by the member countries of the center. The Center provides the airfare and the hosting country provides the accommodations for the participants.

During the year the following Sri Lankan scientists/officials participated at the following activities organized by the Center.

- 1. Mr. P.H.M.P.K. Senarathne, Environmental Officer of Sri Lanka Energies Pvt. Ltd participated at the International workshop on "the Role of Micro-hydel for Developing Countries", Kathmandu, Nepal, 19-22 April, 2013.
- 2. Ms. Sumika Perera, Women's Resources Centre participated at International Conference on "Empowering Women in Developing Countries through Information and Communication Technologies", India, 1-3 June 2013.
- 3. Dr. Iresha Kottegoda, Principal Research Officer of ITI participated at the international workshop on "Nanotechnology", Indonesia, 2-5 October, 2013.
- Ms. Upeka Deepani Rajawardana, Research Officer, Industrial Technology Institute has been offered the six months Research Training Fellowship for Developing Country Scientists (RTF –DCS)

# **Other NASTEC Activities**



# **Young Scientists Forum (YSF)**



The Young Scientists Forum (YSF) is the largest consultative forum of the National Science and Technology Commission (NASTEC). It is an arena for young scientists in Sri Lanka for networking. The current membership of the Forum exceeds 600 and they include the young scientists from universities, Science & Technology and Research & Development institutions mainly of the public sector.



# YSF Annual General Meeting – 2012

The 2012 Annual General Meeting (AGM) of the Young Scientists Forum along with the second YSF Symposium was held on 18<sup>th</sup> January 2013 at the Mahinda Silva Auditorium, Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI).

The following members were elected to the YSF Steering Committee for year 2013 at the AGM.

- Dr. Buddhika Aruggoda
   Senior Lecturer
   Department of Agricultural and
   Plantation Engineering,
   Faculty of Engineering Technology,
   Open University of Sri Lanka
- Mr. Sidath Bandara
   Research Officer
   Department of Irrigation and Water
   Management
   Hector Kobbekaduwa Agrarian
   Research and Training Institute
- Dr. Chalinda Beneragama
   Department of Crop Science
   Faculty of Agriculture
   University of Peradeniya
- Ms. Nisansala Bopage
   Department of Chemistry
   Faculty of Natural Sciences
   Open University of Sri Lanka

- Dr. Nilanthi Dahanayake
   Senior Lecturer
   Department of Agricultural Biology
   Faculty of Agriculture
   University of Ruhuna
- Dr. Sudarshanee Geekiyanage
   Senior Lecturer
   Department of Agricultural Biology
   Faculty of Agriculture
   University of Ruhuna
- Dr .Chamalie Nahallage
   Senior Lecturer
   Department of Sociology &
   Anthropology
   University of Sri Jayawardenapura
- Mr. Gayantha Kodikara
   Lecturer
   Department of Oceanography and Marine Geology

Faculty of Fisheries and Marine Science & Technology University of Ruhuna

- Dr. Nilukshi Liyanagunawardena Veterinary Research Officer Bacteriology Division
   Veterinary Research Institute
- Mr. Chinthan Manoratne
   Research Officer
   Materials Technology Division
   Industrial Technology Institute
- Mr. P. Ranasinghe Senior Research Officer

- Herbal Technology Division Industrial Technology Institute
- Ms. Geethani Samarasinghe
   Research Officer
   Department of Irrigation and Water
   Management
   Hector Kobbekaduwa Agrarian
   Research and Training Institute
- Mr. Ashvin Wickramasooriya Senior Lecturer
   Department of Geography
   Faculty of Arts
   University of Peradeniya

Dr. Buddika Aruggoda worked as the Chairperson of the steering Committee and Dr. Sudarshani Geekiyanage and Dr. Nilanthi Dahanayake worked as joint secretaries.



# **Second YSF Symposium**

The YSF symposium is a scientific event initiated in year 2012 by the Young Scientist Forum (YSF), along with the National Science and Technology Commission (NASTEC). The objective of the symposium has been to provide an opportunity for YSF members to present their research work to the scientific community and to learn from each other's experience.

The second YSF Symposium was held on 18<sup>th</sup> January 2013 at the Hector Kobbekaduwa Agrarian Research and Training Institute with the participation of more than 100 young and senior scientists. In response to the call for Abstracts, NASTEC received 103 Abstracts from YSF Members. Each Abstract was evaluated by two Senior Scientists as an honorary service to the YSF. Based on their recommendations, 57 abstracts were selected for oral presentations and 12 were selected for poster presentations. The Abstracts selected to present were published as proceedings.

Oral Presentations were made under six themes;

- Agricultural Sciences
- Biochemistry and Microbiology
- Biotechnology and Molecular Biology
- > Environmental Sciences
- Physical Sciences, Engineering and Information Technology
- Social Sciences and Management

All the presentations were evaluated by invited Senior Scientists and best presenters of each session were awarded with Merit Certificates.

# Winners of Merit Certificates

#### Agricultural Sciences

T.M.S.R. Perera – University of Peradeniya

T.H.P.S. Fernando – Rubber Research Institute

C.L. Thilakarathne - Dept. of Export Agriculture

# • Biochemistry and Microbiology

C.K. Benaragama – University of Peradeniya

N.S. Bopage -The Open University of Sri Lanka

R.P.S.S. Rajapakshe - University of Peradeniya

N. Liyanagunawardena – Veterinary Research Institute

# • Biotechnology and Molecular Biology

B.G.N.D.K. Somathilaka – University of Colombo

C. Kanatiwela – University of Colombo

H.A. Darshani Ruwandeepika –Sabaragamuwa University of Sri Lanka

## • Environmental Sciences

M.M.M. Najim - University of Kelaniya

T.L. Wijayarathne –Tea Research Institute

A.K. Wickramasooriya -South Eastern University of Sri Lanka

## Physical Sciences, Engineering and Information Technology

G.R.N. Kodikara - Arthur C. Clarke Institute for Modern Technologies

W.J.M.J.S.R. Jayasundara – University of Peradeniya

C.N. Nupearachchi –The Open University of Sri Lanka

## • Social Science and Management

J.M.M. Udugama –Wayamba University of Sri Lanka

K.G.P.H. Kandegedara – Rajarata University

A.M. Perera - Rajarata University of Sri Lanka

#### Poster Session

C.D. Wanniarachchi – University of Peradeniya

A.D. Igalawithana - Institute of Fundamental Studies

U.G. Chandrajith –Institute of Post-harvest Technology



# <u>YSF Awards – 2012</u>

YSF Awards are presented annually under two categories to encourage the young scientists who excelled in their areas of work. Each award consists of a cash prize and a certificate. The following scientists were presented with YSF Awards at the YSF Annual General Meeting held on 18<sup>th</sup> January 2013 for the work they carried out during the last five years.

- Award for Excellence in Scientific Research ,Dr. Sarojini Fernando, Rubber Research Institute of Sri Lanka
- Award for Excellence in Popularization and Promotion of Science



Prof. Udith Jayasinghe Department of Agri Business Management Faculty of Agriculture and Plantation Management Wayamba University of Sri Lanka



# Teacher Training Program on "Fundamentals of Biotechnology and Molecular Biology"

NASTEC and YSF, in collaboration with the office of the Provincial Director of Education of Eastern Province, organized a Teacher Training Programme on "Fundamentals of Biotechnology and Molecular Biology" for Advanced Level Science Teachers of the Eastern Province. This program was held on 14<sup>th</sup> and 15<sup>th</sup> February 2013 at the Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurai.

This training program was conducted with the objective of updating the knowledge of A/L Science Teachers in the fields of Biotechnology and Molecular Biology which were introduced to the A/L curriculum recently.

The program covered the subject areas given below:

- ✓ Characteristics of DNA
- ✓ Plant tissue culture
- ✓ Enzymes working with DNA
- ✓ DNA extraction & Gel electrophoresis
- ✓ Protein synthesis
- ✓ Bacterial Plasmids & Viral genome
- ✓ Blotting Techniques
- ✓ DNA Finger Printing

- ✓ Vectors used in rDNA Technology
- ✓ DNA gene cloning,
- ✓ Genetically Modified Organisms (GMO) and their uses in agriculture, medicine and industry as well as social problems concerning the GOMs.

The following resource persons conducted the training program

## Prof. P.A. Weerasinghe

Professor in Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka

#### Dr. M.I.S. Safeena

Dean, Faculty of Applied Sciences South Eastern University of Sri Lanka

#### Mr. M.C.M. Zakeel

Senior Lecturer
Faculty of Agriculture, Rajarata University of Sri Lanka



# Workshop on "Presenting Your Research at a Scientific Forum"

YSF organized a "Workshop on Presenting Your Research at a Scientific Forum" on 27<sup>th</sup> June 2013, which was conducted at the R.R. Appadurai Auditorium, Faculty of Agriculture, University of Peradeniya.

The workshop was attended by more than 170 participants including university students, academics, research officers of S&T and R&D Institutions.

The following themes were discussed by the eminent resource persons.

#### Scientific Audience: What do they expect?

Prof. Buddhi Marambe Director, Agricultural Education Unit Faculty of Agriculture, University of Peradeniaya

## Effective verbal and non-verbal communication skills for Scientists

Dr. Chanaka Senanayake Senior Lecturer, Faculty of Engineering, University of Peradeniya

#### "Scientific" Power point Presentations

Dr. Chalinda Benaragama Senior Lecturer and Director, Staff Development Center University of Peradeniya



# **Workshop on Essentials for Biological Research**

On 5<sup>th</sup> September 2013, the NASTEC and the YSF conducted a workshop for university Academics, Scientists, and Research Officers at the C K Charles Auditorium, Faculty of Agriculture, and University of Ruhuna on the topic "Essentials for Biological Research". The purpose of this workshop was to give additional knowledge in ethical accepts, statistical analysis, reference management and software for biology students engaged in research.

The following resource persons conducted the workshop.

# **Conception of Biological Research: from the Perspective of Physics**

Prof. Dammika Tantrigoda Chairman, NASTEC

# **Statistics: Experimentation in Biological Research**

Prof.Gamini Senanayake Vice Chancellor, University of Ruhuna

# **Citation: Reference Management Software**

Prof. K.L. Wasantha Kumara Head, Department of Agricultural Biology Faculty of Agriculture, University of Ruhuna



Participants at the workshop

# **Ethics: Ethics in Biological Research**

Prof. Susirith Mendis Deputy Vice Chancellor, Sir John Kothalawala Defence University

# **Statistics: Experimentation in Biological Research**

Mrs. D.A.B.Nimalshanthi Gunarathna Senior Lecturer Department of Crop Science, Faculty of Agriculture, University of Ruhuna

# **Our Staff**

# **Chairman (Since April 2013)**

Prof. Dammika Tantrigoda (B.Sc. (Cey), M.Sc., Ph.D. (Durham) Chair and Senior Professor of Physics (University of Sri Jayawardenapura, 2004 to Present)

# **Director/CEO (Since October 2013)**

Dr. Muditha Liyanagedara B.Sc., M.Phil (Peradeniya) Ph.D. (Seoul)

#### **Executive Staff**

## **Scientific Programme Manager**

Ms. Asha Pitadeniya (B.Sc., M.Sc.) (Peradeniya)

## **Executive Secretary**

Mr. Rukman Cooray Bulathsinhala

# **Supporting Staff**

#### **Programme Assistant- Finance**

Mr.Thusitha Rathnayake (M.A.A.T.)

## ICT/Database Associate (Since October 2013)

Ms. Isanka Samarawickrama B.Sc. (University of Bangalore) MIT (University of Colombo)

# Office Aids

Mr. A.D. Danapala

Mr. Nishantha Piyadasa

# **Deputy Director / Finance and Administration**

Mrs. Kumari Peiris (B.Com) (Sri Jayawardenepura)

#### **Research Assistant**

Ms. Amali Jayathilaka (B.Sc.) (Sabaragamuwa) (up to April 2013)

## **Management Assistants**

Mrs. Nilmini Perera

Mrs. Dakshini Karunathilake

Ms. Sayumi Wijesinghe

Ms. Nishanthi Maharage

#### **Drivers**

Mr. Anil Hettiarachchi

Mr. Jayashantha Prabath

Mr. Pradeep Eranda

# **Staff News**

- 1. National Science and Technology Commission moved to a new premises at Borella (31/9,31/10 Dudley Senanayaka Mawatha, Colombo 08 in January 2013.
- 2. In April, 2013, we welcomed Prof. Dammika Tantrigoda, Senior Professor of Physics, as our Chairman.
- 3. New Commission has been appointed on 22<sup>nd</sup> April 2013. The 1<sup>st</sup> Commission Meeting of the new commission was held on 7<sup>th</sup> May 2013; Hon. Patali Champika Ranawaka, Minister of Technology and Research, participated at this first Commission Meeting.
- 4. In April 2013, NASTEC bade farewell to Ms. Amalie Jayathilake, Research Assistant, who left NASTEC to join Sabaragamuwa University of Sri Lanka as a probationary lecturer. We wish her well in her future career.
- 5. In June 2013, we also welcomed Prof. C.P. Abeyrathne as a consultant. Prof. Abeyrathna was on sabbatical leave from University of Sri Jayawardenapura and joined NASTEC to conduct the National Science and Technology Review. She worked with us up to November 2013.
- 6. In October 2013, Dr. Muditha Liayanagedara, former Actg: Director and Scientific Programme Manager has been appointed as the Director/CEO of NASTEC.
- 7. In October 2013, NASTEC welcomed Ms. Isanka Samarawickrama, who joined us as the ICT/ Database Associate.

# **Events attended by the Staff**

- Mrs. Kumari Peiris, Deputy Director Finance and Administration and Mr. Thusitha Rathnayake, program Assistant - Finance participated at a workshop on "Financial Reporting in Compliance with Accounting Standards" organized by the Ministry of Youth Affairs and Skills Development on 16<sup>th</sup> and 22<sup>nd</sup> January 2013.
- 2. Prof. Dammika Tantrigoda, Chairman and Dr. Muditha Liayanagedara, Acting Director participated at an out bound Training Programme organized by the Ministry of Technology and Research from 27<sup>th</sup> to 29<sup>th</sup> September 2013 at Maduru Oya.
- 3. Ms. Asha Pitadeniya, Scientific Programme Manager and Mrs. Kumari Peiris, Deputy Director-Finance and Administration participated at a workshop on "Exceptional Leadership & Authentic Image Management" organized by the "Skills Development Fund Limited" on 28<sup>th</sup> October 2013.
- 4. Dr. Muditha Liyanagedara, Acting Director participated at the 13<sup>th</sup> Governing Council Meeting of NAM S&T Center held in Johannesburg, South Africa on 1<sup>st</sup> September to 5<sup>th</sup> September 2013.
- 5. Mr. A.D. Danapala, Office Aid, participated at a workshop on "Roles and Responsibilities of Office Assistant for Higher Labor Productivity" organized by the National Institute of Labor Studies on 8<sup>th</sup> and 9<sup>th</sup> October 2013.

# Acknowledgement

## Consultants

Prof. C.P. Abeyrathne

# Expert Study Group on Establishment of National Laboratory Equipment Center

Prof. T.R. Ariyaratne Dr. Shantha Amarasinghe

Prof. Lalin Karunanayake Dr. Jagath Weerasena

Dr. Satish Namasiwayam Dr. Sirimal Premakumara

Dr. A.M. Mubarak Mr. A.Pannila

Dr. M.K. Jayananda

# Expert Study Group on Open Access Policy for Research Information

Prof. Hiran Amarasekara Dr. Pradeepa Wijethunga

Prof. Ajith de Alwis Ms. Nayana Wijesundara

Dr. W. Senevirathne Ms. Sunethra Perera

# > Expert Study Group on Investigating the Scientific Basis of Indigenous Knowledge

Prof. Marcus Karunanayake Prof. Tissa Kariyawasam

Prof. Nimal De Silva Dr. Nalin Ganegoda

Prof. K. K. D. S. Ranaweera Mr. Asoka de Silva

# Steering Committee of the Young Scientist Forum

Dr. Buddhika Aruggoda Mr. Chinthan Manoratne

Dr. Chalinda Beneragama Dr. Charmalie Nahallage

Dr. Nilanthi Dahanayake Mr. Pathmasiri Ranasinghe

Dr. Sudarshanee Geekiyanage Ms. Geethani Samarasinghe

Mr. Gayantha Kodikara Mr. Ashvin Wickramasooriya

Dr. Nilukshi Liyanagunawardena

# **Financial Statement**

# NATIONAL SCIENCE AND TECHNOLOGY COMMISSION STATEMENT OF FINANACIAL POSITION AS AT 31<sup>st</sup> DECEMBER 2013

(all amounts are given in Sri Lanka Rupees)

	Notes	2013	2012
ASSETS			
Current assets			
Cash and cash equivalents	1	257,965	291,582
Trade and other receivables	2	14,000	14,000
Inventories / Stocks	3	105,889	180,769
Prepayments	4	2,093,324	1,306,993
Staff Loans	5	541,068	570,700
		3,012,246	2,364,044
Non - current assets			
Property, plant and equipment	6	9,966,651	13,528,330
Total Assets	<u> </u>	12,978,897	15,892,374
LIABILITIES			
Current liabilities			
Accrued expenses	7	1,248,519	886,932
Non - current liabilities			
Deferred Income	8	9,517,855	12,323,562
Provision for Gratuity	9	1,940,852	1,567,679
		11,458,707	13,891,241
Total liabilities		12,707,226	14,778,173
Total Net Assets		271,671	1,114,201
NET ASSETS/EQUITY			
Accumulated fund	10	3,081,960	3,793,705
Revaluation reserve	10	1,629,300	1,629,300
Reserves		(4,439,589)	(4,308,804)
NCJCI VCJ		(4,433,303)	(4,300,004)
Total Net assets/equity		271,671	1,114,201

# NATIONAL SCIENCE AND TECHNOLOGY COMMISSION STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED $31^{\rm st}$ DECEMBER , 2013

(all amounts are given in Sri Lanka Rupees)

Revenue	Notes	2013	2012
Recurrent Grant			
Capital Grant - S & T Services		18,759,000	15,448,150
Amortization of Government Grants - Depreciation		1,861,731	709,000
Income	11	4,919,720	5,361,418
		132,352	109,936
		25,672,803	21,628,504
Expenses			
Personal Emoluments	12	7,990,799	6,796,285
Traveling	13	377,366	435,151
Supplies and consumables used	14	354,585	274,623
Maintenance	15	1,072,414	833,478
Contractual services	16	5,848,842	4,486,096
Transfers	17	3,014,663	2,614,688
S & T Services	18	2,314,570	810,013
Depreciation and amortization expenses	1	4,919,720	5,361,418
Total expenses	<del>-</del>	25,892,959	21,611,752
Surplus/(Deficit) from operating activities	=	220,156	16,752
Financial Cost			
Gain on sales of property plant and equipment		89,371	(55,450)
Total non-operating revenue (expenses)		-	-
Net surplus/(deficit) for the period	_	(130,785)	(38,698)

# **Auditor General's Report**



# විගණකාධිපති දෙපාර්තමේත්තුව කොස්සාய්வாளர் நலைமை அதிபதி நிணைக்களம் AUDITOR GENERAL'S DEPARTMENT



මගේ අංකය ഒങ്ങളു இல. LS/02/E/NASTEC/1/13/24 இல் மூம் இல். Your No.



26 August 2014

Chairman,

National Science and Technology Commission.

Report of the Auditor General on the Financial Statements of the National Science and Technology Commission for the year ended 31 December 2013 in terms of Section 14(2)(c) of the Finance Act, No.38 of 1971

The audit of financial statements of the National Science and Technology Commission comprising the statement of financial position as at 31 December 2013 and the statement of income and cash flow statement for the year then ended and 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 Part VII 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 Commission 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 Commission on 19 May 2014.

1:2 Management's Responsibility for the Financial Statements

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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). 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. 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 judgements, 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

අත 306/72, පොල්දුව පාර, බත්තරමුල්ල, ශී ලංකාව, . - இல. 306/72, Gumwagrau ක්ෂි, පුද්දුපුලාමකාන, இහාමකාන. No. 306/72, Polduwa Road, Battaramulla, Sri Lanka

\*\*Employed Street Ik\*\*

\*\*Www.auditorgeneral.gov.lk\*\*

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internal control relevant to the Commission'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 Commission's internal control. 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 powers to the Auditor General to determine the scope and extent of the audit.

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

1:4 Basis for Qualified Opinion

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

2. Financial Statements

2:1

Qualified Opinion

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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 and Technology Commission as at 31 December 2013 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 Financial Statements

2:2:2 Sri Lanka Public Sector Accounting Standards

The statements of changes in the net assets had not been present

The statements of changes in the net assets had not been presented with the set of financial statements of the Commission in terms of Section 21(c) of the Sri Lanka Public Sector Accounting Standard No.01.

# 3. Financial Review

# 3:1 Financial Results

According to the financial statements presented, the operations of the Commission for the year ended 31 December 2013 had resulted in a surplus of Rs.213,415 as against in deficit of Rs.38,698 for the preceding year. Accordingly, an increase of Rs.252,113 in the financial results for the year under review was indicated. That had been mainly due to an increase of the Government recurrent grant in the year under review by a sum of Rs.3,310,850.

# 3:2 Analytical Financial Review

According to the statement of financial position presented, the working capital ratios of the Commission had been as follows.

	Year 2013	Year 2012
Current Ratio	1.80	1.20
Quick Ratio	1.71	1.02

# 4. Operating Review

# 4:1 Performance

The following observations are made.

- (a) Even though provision amounting to Rs.400,000 had been made in the Annual Action Plan for the activities of the academic groups appointed for the formulation of paper on concepts on local knowledge and a policy for the National Laboratory Equipment Centre, a sum of Rs.33,673 or 8.5 per cent only out of that had been utilized. The concepts paper and the policy had not been formulated and issued even by 31 December 2013.
- (b) Accounting to the Action Plan for the year under review, plans had been made for the review the activities of 04 Government institutions of science and technology and issue reports thereon and for the analysis of the benefits in the previous year Annual Report of the Coconut Research Institute. The reviews of those intuitions had been done at a cost of Rs.1.23 million while the final reports on 02 institutions only had been issued by the end of the year. Action had not been taken for the analysis of the previous year Annual Report of the Coconut Research Institution.

# 4:2 Management Inefficiencies

A building which could not provide all the institutional requirements had been procured on rent from a private party for the maintenance of the office of the Commissions on a rent agreement valid from 15 December 2012 to 14 December 2015 without following the Procument Procedure. The Commission had incurred a loss of Rs,740,000 due to entering into the new rent agreement before the expiry of the previous rent agreement.

# 4:3 Staff Administration

The following observations are made.

- (a) The approved cadre of the Commission as at 31 December 2013 had been 19 and out of that 03 posts of Senior Scientist and 01 post of Management Assistant had been vacant.
- (b) Applications had been invited for filling 03 vacant posts of Senior Scientist and one officer had been recruited on 02 May 2014.

# Accountability and Good Governance

The following observations are made.

- (a) An Internal Audit Unit had not been established by the Commission up to the date of audit and the internal audit work had been covered by the Internal Audit Unit of the Ministry.
- (b) The quarterly internal audit reports for the year under review had not been presented for discussion at the meeting of the Audit and Management Committee in terms of Paragraph 09 of the Circular No.DMA.2009(1) dated 09 June 2009 of the Department of Management Audit, while only one internal audit query had been issued in the year.

# 5:2 Budgetary Control

The Commission had approved an expenditure estimate of Rs.33 million for the year 2013 and the actual expenditure of the of the Commission as at 31 December 2013 amounted to Rs.22 million. That represented 66 per cent of the approved estimate. Thus it was observed that the Commission had not made use of the budget as an instrument of control.

# 5.3 Tabling of Annual Reports

In terms of Section 6.5.3 of the Public Enterprises Circular No.PED/12 of 02 June 2003, the Annual Report should be tabled in Parliament within 150 days after the close of the financial year. Nevertheless, the Annual Reports for the years 2011 and 2012 had been tabled in parliament only on 18 July 2013 and 10 January 2014 respectively.

# 6. Systems and Controls

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

- (a) Budgetary Control
- (b) Procurement Policy
- (c) Accounting
- (d) Management Inefficiencies

H.A.S. Samaraweera Auditor General

# Answers to the Report of the Auditor General's

Answers to the report of the Auditor General on the Financial statements of the National Science and Technology Commission for the year ended on 31<sup>st</sup> December 2013 in terms of section 14(2) (c) of the Finance Act No: 38 of 1971

# 2.2 Comments on Financial Statements

# 2.2.2. Sri Lanka Public Sector Accounting Standards

(a) Since there were not sufficient number of items to be given in a statement of changes in the net assets with the financial statements, the changes of the commission's net assets has been shown by the note 8 and 10 in the financial statements.

Commission expects to include a statement of changes in net assets with the financial statements, according to Sri Lanka public sector Accounting Standard No.01 (21c) when preparing the account for year 2014.

# **4. Operations Review**

# 4.1. Performance

(a) NASTEC in collaboration with National Science Foundation (NSF) appointed an expert committee to investigate scientific basis of Indigenous Knowledge (IK). During the initial discussions the committee proposed to prepare a concept paper, but later the necessity of popularizing IK was emphasized. Then committee decided that popularizing IK was more productive and it was not necessary to formulate the concept paper. Accordingly popularizing the IK will be done under the leadership of NSF.

Since the study group members appointed for formulating the policy for the National Laboratory Equipment Center were busy, it was very difficult to reserve dates for meetings. Therefore the policy formulation was delayed, but a draft report has been submitted to the Commission and the final report is being prepared.

Final review reports of Industrial Technology Institute and Institute of Fundamental Studies were submitted to these institutions in 2013. Although the review of NERDC had been completed in 2013, the report was given to NASTEC only in February, 2014. The review of NSF was started in August 2013 and the report was submitted by February 2014.

Therefore the institutional reviews were completed as planned. There was a delay only in submitting the final reports to NASTEC as committee members were busy. Benefits of Coconut Research Institute review could not be analyzed due to the shortage of scientific staff at NASTEC.

## **4.2 Management Inefficiencies**

The building rented can fulfill all institutional requirements. Therefore, the statement in the audit query "which could not provide all the institutional requirements" cannot be accepted. The audit query does not clearly indicate the requirements that cannot be fulfilled.

Whenever the Commission needed to be shifted to a new premise (3 times) it was advertised. But none of the offers received as a reply to the newspaper advertisements was acceptable. In

all such occasions, a suitable premise was selected, according to the information given by different brokers.

As a result of the above experiences, It was clearly seen that advertising in newspapers would be an utter waste of money. Therefore, a registered broker company was selected as an alternative. The agreement between the Broker Company and NASTEC was to present offers free of charge, until a suitable premises is found. This agreement is beneficial in two ways when compared with a paper advertisement.

They are,

- I) No cost incurred
- II) Submitting offers until a suitable premise is found.

Based on the above reasons this procedure was followed to find a suitable premises for NASTEC. It was a circumstantial decision taken based on past experiences.

There were justifiable reasons to shift the commission to a new premises. When comparing the old premises with the new premises, it is obvious from the government valuer's report that the consideration paid is very reasonable as per the facilities and location of the new premises. Therefore, the statement that "a loss of Rs.740, 000.00 was incurred," made by comparing the rental of the new and old premises is not correct.

# **4.3 Staff Administration**

Answers for (a) & (b)

Although three applicants were selected for the 3 vacancies of Senior Scientist posts, only one has reported to the duty. Also another applicant was selected after calling the applications and holding the interview on 2014/06/06 to fill the two remaining positions. But that person rejected the appointment due to the insufficiency of salary.

As the qualifications for Management Assistant has been revised according to the DMS Circular No. 30, dated 01<sup>st</sup> November 2013, these amendments should be approved by the DMS before calling applications. The Commission expects to fill this vacancy after obtaining the said approval.

# 5. Accountability and good governance

# **5.1 Internal Audit**

a) The internal auditor of the Ministry has been made aware in this regard.

# **5.2 Budgetary Control**

Since the tenure of the Commission members expired in January 2012, and a new Commission was not appointed until April 2013, the Seventh Sri Lanka Biennial Conference on Science and Technology (BICOST-VII) could not be held as planned. The funds allocated (Rs. 1.5 M) for BICOST was transferred to the other capital expenses with the approval of Commission. However, that allocation remained unspent because it was not released by the general treasury. As the BICOST was not held as planned the funds allocated for paying research assistants, stationery, fuel, telephone and printing were also remained unspent.

Since the recruitment to the Post of Director could not be done as planned until November 2013, the allocations for the salaries and allowances for the Director post and two senior scientist posts were remained unspent.

Although funds had been allocated for foreign trainings, those funds were remained unspent, as training opportunities relevant to NASTEC were not available.

Since most of the above issues occurred due to reasons beyond our control, the budget estimate could not be used as an instrument of control

# **5.3 Tabling of Annual Reports**

The reason for this delay was the long standing shortage of NASTEC staff.

# **6. Systems and Control**

The Commission will pay special attention to these four areas of control.