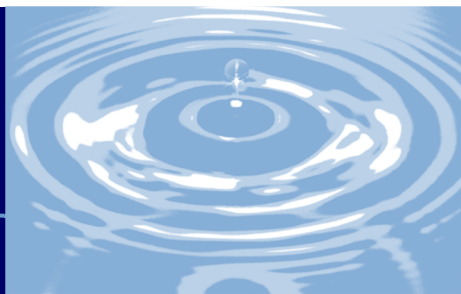


NATIONAL RESEARCH COUNCIL
Sri Lanka



“ Research for Economic Development”

Annual Report

2011

National Research Council
380/71, Bauddhaloka Mw,
Colombo 07

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NRC Annual Report 2011

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NATIONAL RESEARCH COUNCIL OF SRI LANKA

380/71, Bauddhaloka Mw, Colombo 07 • Tel: 011/-2697538 Fax: 011-2697166 .
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NRC Annual Report 2011

VISION

“Enable Sri Lanka to achieve science and knowledge based developed country status”

MISSION

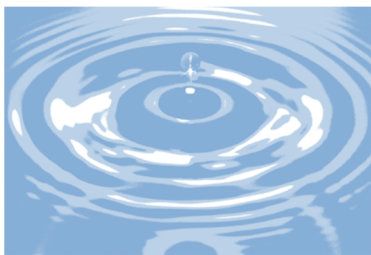
“To promote, fund and facilitate and monitor fundamental and applied research and enhance human resource of Sri Lanka to achieve science and technology based developed country status”



NRC Annual Report 2011

OBJECTIVES

- To bring in private sector and industry representation in addition to the highly productive academics into the Council;
- To promote fundamental and applied research and facilitate human resource development in all disciplines of Science by funding University based Research Students registered for Higher Research Degrees;
- To plan and coordinate the research effort of researchers in each Public Sector Scientific Research and Development Institutes;
- To facilitate the research and evaluate the performance of individual researchers in the Public Sector Scientific Research and Development Institutes and make periodic recommendations through the Presidential Secretariat to the Treasury for funding such research;
- To promote, fund and facilitate collaborative research programmes between Researchers in Public Sector Scientific Research and Development Institutes and Universities leading to the award of Higher Research Degrees by the Universities;
- To promote and facilitate partnerships among the industry, Universities and the Public Sector Scientific Research and Development Institutes;
- To develop systems of national recognition and awards for successful research and innovations;
- To foster and sustain a Science and Technology Research Culture and Community in Sri Lanka that would respond productively to national development needs.



NRC Annual Report 2011



Chairman's Message

It is very great pleasure to present to you the Annual Report of the National Research Council for the financial year 2012, the apex institution in funding for government research in Sri Lanka. The National Research Council was established under constitutional powers of His Excellency the President Mahinda Rajapakse to fulfill his Mahinda Chinthana "Idiri dekma" development plan.

During the year 2011, NRC continued its Research grant and PhD training program by starting 51 new research grants projects and awarded 67 PhD/M Phil students fellowships during the period. The final review report of evaluation of the Department of Agriculture was presented to the Council, handed over to Mr. Lalith Weerathunga, Secretary to H. E. the President. A meeting was organized with relevant ministers and officials of the Department of Agriculture at the Presidential Secretariat to start future measures on Evaluation. The DoA agreed to implement the recommendations stated in the report. The Presidential Awards for Scientific Research in 2007, 2008 & 2009 Program was started. The Selection of Publications for Nomination, Identification of Authors, Calculation of Cumulative Index, and preparation of the Reference Book is completed during the period. NRC has contributed significantly to the national development and popularization of science through its media and development programs during the year, Implementing the Neonatal screening for Congenital Hypothyroidism in Monaragala District, and conducted several development Programs for Dayata Kirula Exhibition 2011 & Development programs for Dayata Kirula Exhibition 2012. There were several Newspaper articles published in Year 2011 to publicize the results of Research.

I consider it is my pleasant duty to thank new Minister Hon. Pavithradevi Vanniarachchi, the Deputy Minister Hon. Faizer Mustapha, and Secretary to the Ministry Mrs. Dhara Wijayathilake for the support rendered to the National Research Council.

I also take this opportunity to thank to the Council for their continuous support, Executive Secretary of the NRC for the Initiatives, perseverance and diligence which put forth to make possible above and many more achievements during the year. I look forward with confidence to the NRC's continuing & growing contribution to the Economic and Scientific development through Research in Sri Lanka.

Prof. E. H. Karunanayake.
Chairman



NRC Annual Report 2011

Brief profile of the Council and Staff



Vidyajothi Professor Eric H. Karunanayake

Chairman / NRC

B. SC (Cey), M. Sc (Lond), DIC.,

PhD (Lond) F. I Chem. C. Chem.



Professor W. Priyan S. Dias

BScEng(Hons), PhD(Lond), DIC, CEng, FIE(SL), MStructE, FNAS(SL)



Professor M. Ira Thabrew

B.Sc. Hons. (Cey), Ph.D. (So'ton, UK), C.Chem., F.I.Chem.C., FNAS (SL)



Mr. Moksevi. R. Prelis

BSc(Engr., Cey.), MS(IE & Mgmt.,Purdue)

ISMP(Harvard B S), M.I.Mech.E-C.Eng.(Lond),F.I.E.(Sl)

F.I.B(Sl).

Professor W. A. J. M. De Costa

B.Sc Agric (Peradeniya), PhD (Reading) UK



Prof. Kirthi Tennakone

B.Sc (Ceylon), M. Sc (Hawaii) USA , PhD (Hawaii) USA



Professor E. R. Jansz

BSc (Hons) (Ceylon), PhD Dalhouse



Brief Profile of Council and Staff



Vidyajothi Professor M. A. Careem

B,Sc (Ceylon), PhD. (Chelsea) UK

Vidyajyothi Professor H. Janaka de Silva

MBBS (Colombo), MD (Colombo), DPhil (Oxford), FRCP (London), FRCP (Edinburgh), FCCP, FNAS (SL), Hon. FRACP, Hon. FRCP (Thailand)



Prof. Kathirgamanathan Kandasamy

B.Sc (Cey) PhD(Keele) Eng.



Dr. G. A. S. Premakumara

B. Sc (Colombo), PhD Colombo)MIBiol CBiol MIChemC



Prof. Aruni Tilakaratne

BDS, Ph D, Dip (Coun)

Deshamanya Eng. Dr. Nihal Jinasena

D.Tech (H.C), B.Tech (Eng). D.L.C. (Hons). C.Eng, F.I.E.S.L

Dr. D. S. Rajapaksa

MS (Sri Lanka); FRCOG (UK)



Brief Profile of Council and Staff

Staff of NRC

Secretary:	M. C. Rajapakse
Accountant :	N. S. Hewagama
Scientific Officer:	M. S. Maliyadde
Assistant Accountant:	S. K. Gamhewa
Accounts Assistant:	A. K. D. M. Perera
Program Assistant:	G. L. R. S. Karunathillake
Drivers:	K. K. T. Sandaruwan
Drivers/KKS:	A. D. Gunawardene

Secretary's Report

The National Research Council a national funding agency for high quality scientific research, was formally established by a special directive of H. E. the President of Sri Lanka. Its functions are governed by the Chairman and the Council.

During the FY 2011 the NRC Research Grant Programme, PhD/MPhil Training Programme, Presidential Awards for Scientific Research Programme (PASR), Institutional Review and the Public Awareness Programme were in operation. It has been an exceptional year for the NRC, as we received the highest quantum of funds from the consolidated fund, we received a very large number of applications for the research grants programme and were able to award 67 PhD/MPhil fellowships.

The NRC administered, monitored and evaluated over 90 research project contributing towards the advancement of scientific knowledge and socio-economic development. The PhD/MPhil Programme was streamlined further during this year with the number of fellowships awarded increasing from 13 to 80. Information on scientists were compiled for the PASR programme. On a request made by the Secretary to the President, the Department of Agriculture was reviewed and the report was handed over to the Presidential Secretariat. During this year the NRC funded many R&D projects that are nationally important, e.g. study on metabolic profile of tea, growing rubber in non-traditional areas, genetic study on the dwarf coconut, bio-fertilizer, lighting environment, speech translation, bone grafting, CKDu, neonatal congenital hypothyroidism, mealy bug control, crime detection, dengue, value addition to dolomite, CH₄ emission, were among many more.

While taking the best use of our financial and human resource to achieve our mandated objective, I wish to thank all scientists who committed to their respective research projects and corporate with the NRC in all its activities to build a research culture in Sri Lanka. And hope you will continue to do so now and in the future as we need your support more than ever. I firmly believe 'our Strength is our Scientists.'

We at the NRC Secretariat strives to deliver the best to our scientists to ensure that there is good return on investment from the research projects we fund. I also wish to thank all Council members for their valuable contribution in our effort to take NRC to greater heights and the Treasury and the Ministry of Technology & Research for all the support extended to us during this year.

I am pleased to present the Annual Report to you and sincerely hope that it provides you with a deep appreciation of the National Research Council.

Manisha C. Rajapakse
Executive Secretary

Financial highlights in the preceding 3 years

A review of the preceding three years operating results

Programs (Strategies)	Physical Progress				Financial Progress Rs. Mn		
	Indicator	2009	2010	2011	2009	2010	2011
General admin- istration of NRC					6.8	5.7	6.3
Development Assistance for below Programs					70.9	64.5	213.9
Re- search Grant and PhD Pro- gram	No of Research Grants Selected/ Applications PhD/ M Phi Stu- dents	22 Research Grants and 7 PhD Grants out of 47 ap- plications 7 PhD stu- dents	19 Research and PhD Grants out of 74 applica- tions 6 PhD Stu- dents	51 Research and PhD Grants was awarded out of 200 appli- cations 32 PhD Stu- dents already registered and 48 to be registered			
Presi- dential Awards for Scien- tific Research Pro- gram	Functions held and No of Scien- tists awarded	Compilation of the Data- base of Re- search awardees was contin- ued	One program held covering 2003,2004,20 05 and 2006 and 484 Sci- entists were awarded by the President	Compilation of database of awarding scientists for 2007, 2008 and 2009 is continued	-	0	-

Financial highlights in the preceding 3 years

A review of the preceding three years operating results continued

Programs (Strategies)	Physical Progress				Financial Progress Rs. Mn		
	Indicator	2009	2010	2011	2009	2010	2011
Institutional Evaluation Program , Media, Development and Other Programs	Institutions Completed Activities completed	- Participated Dayata Kirula development Exhibition, 10 Year anniversary publication and Symposium was held.	Department of agriculture was reviewed Participated Dayata Kirula development Exhibition, Introducing Scientists to the nation, Few Media casts and Development of Website etc.	Department of agriculture was reviewed and Review report was Submitted to the secretary to the President. Participated Dayata Kirula development Exhibition, Young scientist program was started.	-	-	-
Total					77.7	70.2	220.2

Programs in Operation

PHD & RESEARCH GRANT PROGRAM

- Introduction
- Progress during the period
- New Grants started during the period

Introduction

Research Grant Program

The NRC provides funds for Scientific Research Projects. Grants are open to any researcher of a Public R & D organization in Sri Lanka.

Public R& D organizations are the National Research Organizations, Universities and Affiliated Colleges and any governmental and semi-governmental organization where a research option exists in the mandate.

The Research Grants are advertised annually, generally at the beginning of the year and are evaluated by the Council. The evaluation criteria will include the scientific aspects, the relevance of the study to national development, its contribution to strengthening the capacity of science and technology in the country, and the possibility of research findings being published in international journals.

The high valued basic research is selected by the council that has a tremendous potential on development of the country, undergoing a strict evaluation process.

For the proposals selected, the Council will decide on an appropriate allocation of funds which will be channeled from the Treasury directly to the Principal Investigator, who will be solely responsible for implementing the project. Funds are considered for equipment, consumables, etc.

The success of a grant is measured by international publications in referred journals (Especially SCI indexed journals), where the publications are judged by the most competent international scientists. This is to ensure that the research carried out is on par with international standards, and also to encourage our scientists to reach such high standards.

Finally, the projects results that have direct benefit to the public are moved to the Public Awareness Programme.



PhD Program

The Science and Technology status of a country is also the backbone of its development strategy. This fact is amply demonstrated by the rapid development achieved by the newly industrialized countries (NIC) such as South Korea, Taiwan and Singapore. These countries invested huge capital from the GDP to produce highly trained (at PhD level) scientists in basic sciences such as chemistry, physics, mathematics, biology, medical sciences, engineering sciences and agricultural sciences. In contrast, Sri Lanka's investment has lagged behind that of these countries.

In accordance with the vision statement of H.E. the President "Mahinda Chanthana – Towards a new Sri Lanka", and the decade of development promulgated in the National Budget 2007, the NRC has proposed to undertake the funding, monitoring and successful completion of 500 PhDs in this decade of development.

Under this program it is envisaged to promote active cooperation and collaborations between universities and public sector research and development institutes such as TRI, CRI, RRI, NARA, ITI, etc. This will also provide a mechanism for postgraduate training of junior scientists at public sector institutes at PhD level

Progress during the period

1st Quarter 2011

The above two programmes were considered as one as both require similar activities. The two set of applications forms were combined together and one set of application was introduced to make it convenient to the applicant and the evaluator.

Calling for Applications: by paper advertisement, the advertisement was circulated to all universities, faculties and the R & D institutes and emails were sent to all researchers in our database.

Group research with multidisciplinary approaches, collaborative research were encouraged, start-up grants were also offered during this call for applications. All inquires on the application were attended promptly during this period.

2011 APPLICATION HIGHLIGHTS

Grant Applications received	199
PhD/MPhil students	270
Group Research programmes	135
Co-investigators/collaborations	254
Foreign partnerships	12

Applications closed by end of March 2011. A total of 199 applications were received. The number of applications received this year have increased by three folds compared to the previous years.

The transactions of the on-going grants were in progress. The annual progress reports of the on going grants were send for evaluations.

The Chairman met several grantees during this period to discuss the progress of research work.

HIGHLIGHTS OF RESEARCH TOPICS

Medical	Agriculture	Energy /Eng.	Forestry /Env.	Computer
Dengue	Seed Potatoes	Wind Energy	Knuckles	Language
Breast Cancer	Mealybug	Solar	Seed Biology	Navy training
Leishmaniasis	Rice Breeding	Structural Eng	Solid Waste	Policing
Bone Grafting	Rice fertilizer		Lightening	Telemedicine
CKD	Rubber		Methane Emission	
	Tea		Biogasification	

Visit to Grantee's Laboratory :

The Chairman and Secretary visited several laboratories funded by the NRC, at the IFS/ Kandy and Peradeniya University.

Leishmaniasis Projects :

The Chairman met the two grantees who were conducting research on Leishmaniasis. This was mainly done to bring together scientists who work on a common research problem. They agreed to conduct some public awareness programmes in Leishmaniasis prevalent areas.

2nd Quarter 2011

The applications (2011) were sent to two anonymous rapporteurs, who are experts in the field. The Council which met on the 17 & 18 of June screened the applications further and selected the application with high scientific merit and national relevance.

Number applications selected for funding = 79

Number of applications referred for resubmission = 55

Number of application rejected = 64

Withdrawn = 1

Only 39% of the applications submitted got selected. The selected applications were forwarded to the Treasury for funding.

3rd Quarter 2011

The treasury released Rs. 155 Mn. and 43 grants were funded.

The legal documents and bank documents were prepared. Later the grant accounts was opened. The chairman met all the grantees on the day of signing the legal documents. A briefing was given to all the grantees on how to operate the NRC grants.

4th Quarter 2011

The balance of Rs. 20 Mn was released and 8 grants were awarded.

A total of 53 PhD/MPhil students registered during this period.

Need Based Assistance Program

1st Quarter 2011

Identification of areas : Several grants needed further research and development to take the benefits to the society. They have submitted new proposals in the 2011 call for applications.

2nd Quarter 2011

Two applications were selected for funding on Neonatal Screening for congenital Hypothyroidism (Rs. 3.1 Mn) and Structural Health Monitoring of bridges (Rs. 10.5 Mn.)

The Director General of Health Services of the Dept. of Health by a circular has already instructed to all government health institutions in the Southern Province to commence the Neonatal Screening for Congenital Hypothyroidism by blood spot assay technique, and cooperate with the programme initiated by the Nuclear Medicine Unit & NRC.

During the *Dayata Kirula* at Buttala, the initial discussions were held to implement the Neonatal Screening for Congenital Hypothyroidism in the Monaragala District

NRC Grant 11- 160

“Establishment of national neonatal screening center for congenital hypothyroidism and to assess the predictors of newborn screening behavior of Sri Lankan mothers”

Dr. Manjula Deshapriya Hettiarachchi
Nuclear Medicine Unit, Faculty of Medicine,
University of Ruhuna, P.O. Box 70, Karapiitya, Galle

NRC Grant 11- 106

“Assessment, damage detection, life evaluation, repair and retrofitting of existing bridges in Sri Lanka due to overloading and environmental interaction”

Prof. P. B. R. Dissanayake.,
Department of Civil Engineering
University of Peradeniya, Peradeniya

Initiations were made to conduct the and Structural Health Monitoring of bridges of the Sabaragamuwa province and the request was forwarded to the Road Development Authority through the Ministry of Technology & Research.

3th and 4th Quarter 2011

Funds were released to carry out the above two research.

Development and Technology transfer Program

1st - 4th Quarter 2011 – No funds released

Prof. C A N Fernando, through NRC Grant 07- 29 was facilitated to develop the Nano-Technology Laboratory at the Wayamba University. Other than the research activities conducted in this lab, facilities were provided to undergraduate and several post graduate students to enhance their knowledge in this field of nanotechnology.

Develop IP Policy – Ms. Manisha Rajapakse and Mr. Samantha Gamhewa participated in a workshop “ Intellectual Property Rights for Growth & Prosperity” organized by the Industrial Technology Institute and IDLO.

Filing of Patent for Btk – This refers to NRC Grant 05-10 given to Dr. Radhika Samarasekera. The NRC assisted the grantee in obtaining the registration for Bti, as this was the first biological pesticide that was registered in Sri Lanka and there were several delays/obstructions in obtaining it. The assistance of the Presidential Secretariat too was sought in this matter.

Introduction of Dengue Kit - There were technical problems and this kit was not introduced as envisaged.

New grants started during the period

Grant No	Title of Project	Principal Investigator	Institution
11-004	An investigation of the lightning environment in Sri Lanka	Prof. D. U. J. Sonnadara	University of Colombo
11-007	Space-Time dynamics and parameters of growth of toxic cyanobacteria in Nuwara wewa and Nachchaduwa wewa in Anuradhapura.	Prof. A. Weerasinghe	Rajarata University of Sri Lanka (RUSL)
11-011	Genotoxicity assessment of surface waters of Kelani River and the industrial effluents reaching the river using different biological systems	Prof. A. Pathiratne	University of Kelaniya
11-015	Novel cardiovascular risk markers Paraoxonase ,Apolipoprotein A-1 (apoA- 1) and Glutathione Peroxidase genotype -1 in Coronary Artery Disease	Prof. H. Peiris	University of Sri Jayawardenepeura
11-022	Investigations on endophytic diazotrophic bacteria and their inoculation effects on growth and nitrogen uptake of rice	Dr. N. Welikala	University of Kelaniya
11-023	Metabolite Profiling of Tea Germplasm of Sri Lanka	Dr. P. A. N. Punyasiri	Tea Research Institute of Sri Lanka (TRI)
11-025	Social Sensor Networks for Opinion Analysis	Dr. T. N. K. De Zoysa	University Of Colombo School of Computing
11-029	Data-driven Speech Translation between Sinhala and Tamil	Dr. A. R. Weerasinghe	University of Colombo School of Computing
11-034	Molecular detection of toxigenic cyanobacteria, quantification of microcystin and exploiting microbial diversity to remove microcystin for water treatment solutions	Dr. M. M. Pathmalal	University of Sri Jayawardenepeura
11-042	Determination of the Genetic Architecture of Yellow (Dwarf) Coconut Populations in Sri Lanka	Dr. S. A. C. N. Perera	Coconut Research Institute
11-046	bone graft and bone substitutes for treating bone injuries, traumas, non-traumatic disorders.	Prof. R. P. V. J. Rajapakse	University of Peradeniya

Grant No	Title of Project	Principal Investigator	Institution
11-051	A study on the prevalence and clinico-pathological characterization of triple negative breast carcinomas and those with basal phenotype.	Prof. M. D. S. Lokuhetty	University of Colombo
11-053	Synthesis, characterization and study of physico-chemical properties of some polymeric materials in the form of nanofibres and their applications in antimicrobial polymer nanofibre water filters and dye-sensitized solar cells.	Prof. C. B. DISSANAYAKE	Institute of Fundamental Studies
11-054	Development of electrochemical technologies to remove organic and heavy metal pollutants present in pesticides	Dr. K. G. N. Nanayakkara	Institute of Fundamental Studies
11-056	Application of Biofilm-Biotechnology for biofuel production, novel biofertilizer development and amelioration of environmental pollution	Prof. G. Seneviratne	Institute of Fundamental Studies
11-059	Gene expression analysis: Identifying the missing link in chronic kidney disease of unknown aetiology (CKDu) in Sri Lanka	Dr. D. N. Magana-Arachchi	Institute of Fundamental Studies
11-065	Vidusayura - A perception enhanced immersive virtual environment for maritime education. This is a tailor-made Virtual Reality (VR) solution for Sri Lanka Navy(SLN)	Prof. N. D. Kodikara	University of Colombo School of Computing (UCSC)
11-066	Accuracy, Convenience and Benefits of treating Patients in an eClinic using the Vidusuwa Telemedicine Solution in a Sri Lankan Context	Dr. S. M. K. D. Arunatileka	University of Colombo School of Computing (UCSC)
11-067	Development of Assistive Robotic Arms	Dr. R. A. R. C. Gopura	University of Moratuwa
11-071	Intelligence Led Policing Using Data Mining Techniques	Dr. Y. P. R. D. Yapa	University of Peradeniya
11-072	Towards Better Performance: Development of an Automated Tool for Performance Evaluation in Sports using Trajectory Analysis.	Dr. U. A. J. Pinidiyaarachchi	University of Peradeniya
11-075	Viral aetiologies of encephalitis in a hospital-based patient population in Sri Lanka	Dr. T. Chang	University of Colombo
11-080	A. Investigation of gastrointestinal parasitic infection in goats in North Western Province and implementation of genetic and immunological intervention	Mr. P. A. Gamika	Wayamba University of Sri Lanka
11-087	Identification of genomic regions associated with phosphate deficiency tolerance in Sri Lankan rice germplasm for marker assisted breeding	Dr. S. D. S. S. Sooriyapathirana	University of Peradeniya
11-091	Dormancy and germination requirements of seeds of some dominant mountain forest species in Sri Lanka, and possible effects of climatic change	Dr. K. M. G. G. Jayasuriya	University of Peradeniya

Grant No	Title of Project	Principal Investigator	Institution
11-093	The psychological impact of spinal cord injury; Long term difficulties and coping strategies	Dr. S. Williams	University of Kelaniya
11-099	Molecular identification of <i>Ralstonia solanacearum</i> (E.F.Smith) in seed potato.	Dr. P. N. Dasanayaka	University of Sri Jayeward-enepura
11-106	Assessment, damage detection, life evaluation, repair and retrofitting of existing bridges in Sri Lanka due to over-loading and environmental interaction	Prof. P. B. R. Dissanayake	University of Peradeniya
11-116	Selection and evaluation of potential egg parasitoids for biocontrol of <i>Cnaphalocrocis medinalis</i> , Rice leaf folder.	Dr. K. S. Hemachandra	University of Peradeniya
11-118	Effect of soil amendment with silicon on preharvest fungal disease and postharvest quality of bitter melon	Dr. W. A. M. Daundasek- era	University of Peradeniya
11-120	Establishment of native tree islands in man-made grass-lands at the Knuckles Forest Reserve, Sri Lanka.	Dr. A. M. T. A. Gunaratne	University of Peradeniya
11-121	Effectiveness of multi strain Rhizobial inoculants for edible legumes of Sri Lanka	Dr. C. L. Abayasekara	University of Peradeniya
11-122	Characterization of the antibacterial activity of Triphala, a commonly used Ayurvedic product, against multi-resistant human pathogens	Prof. V. Thevanesam	University of Peradeniya
11-125	Empowering rubber farmers in non-traditional rubber growing areas through knowledge on combating adverse impacts of environment for better productivity	Dr. L. Samarappuli	Rubber Research Institute of Sri Lanka
11-129	Dengue virus dynamics/genetic changes in the vector mosquitoes and geo-climatic factors that predict clinical severity of dengue fever (DF), dengue haemorrhagic fever (DHF) and DF/DHF outbreaks	Dr. F. Noordeen	University of Peradeniya
11-142	Assessment of heavy metal pollution in sediments and surface soils in the Colombo Metropolitan Region	Dr. H. M. T. G. A. Pita- wala	University of Peradeniya
11-148	Methane (CH ₄) and nitrous oxide (N ₂ O) emission from six rice varieties as governed by soil microbial communities, rhizosphere characteristics and agronomic practices	Prof. R. M. C. P. Ra- japaksha	University of Peradeniya
11-152	A Study on Design of Domestic Type Machine for De-polymerizing Solid Waste of Polythene and Plastic Bottle to Usable Hydrocarbon Fuel.	Dr. N. K. Hettiarachchi	University of Ruhuna
11-157	Development of Breakthrough Technologies Relevant to Polymer Composites	Dr. L. A. Panamgama	University of Ruhuna

Grant No	Title of Project	Principal Investigator	Institution
11-158	Anaerobic Co-digestion of Rice Straw and Organic Fraction of Municipal Solid Waste for the Enhancement of Biogasification through Physicochemical Adjustments	Mr. S Wijetunga	University of Ruhuna
11-160	Establishment of national neonatal screening center for congenital hypothyroidism and to assess the predictors of newborn screening behavior of Sri Lankan mothers	Dr. M. D. Hettiarachchi	University of Ruhuna
11-166	Investigation of background concentrations and spatial distribution of Heavy metals in surface soils and crops in agricultural fields in Sri Lanka	Prof. S. P. Indraratne	University of Peradeniya
11-175	Improving the performance of hybrid nanocrystalline titanium dioxide (TiO ₂) / polymer solar cell using interface modifiers	Prof. P. Ravirajan	University of Jaffna
11-176	Establishment of Indian sandalwood (<i>Santalum album</i>) plantations and determination of the variation of oil contents in different geographical regions of Sri Lanka	Dr. S. M. C. U. P. Subasinghe	University of Sri Jayewardenepura
11-178	synthesis of value added products from Sri Lankan dolomitic marbles	Dr. D. G. G. P. Karunaratne	University of Peradeniya
11-179	Investigation of phosphorus and potassium nutrition of lowland rice crops in Sri Lanka to increase their nutrient use-efficiency.	Dr. L. D. B. Suriyagoda	University of Peradeniya
11-180	Petrogenesis and geochronology of ultra high temperature granulites from the Highland Complex of Sri Lanka	Dr. M. A. S. P. K. Malaviarachchi	University of Peradeniya
11-192	Bionomics of mealybug species of the low country dry zone, Sri Lanka and their potential threats to the agriculture.	Dr. M. Vinobaba	Eastern University
11-193	Retrofitting of Existing Masonry Building for Dynamic Load induced by Natural Hazards	Dr. G. S. Y. De Silva	University of Ruhuna
11-195	Studies on possibilities of Biofuel production through selected Algae species available in Sri Lanka	Prof. S. Subasinghe	University of Ruhuna
11-196	Fabrication of efficient low cost photo-electrochemical solar cells using novel gel/solid polymer electrolytes and modifying the photo-electrode	Dr. T. M. W. J. Bandara	Rajarata University of Sri Lanka

Programs in Operation

Presidential Awards for Scientific Research

- Introduction
- Progress During the Period

Introduction

The Presidential Awards for Scientific Research program was started in 2001, to honour the Sri Lankan scientists for reaching international standards and to increase the national scientific production.

The entire scheme is based on the Science Citation Index (SCI). The SCI is focused on essential data from over 3,700 of the world's leading scientific and technical journals across 100 disciplines. Every journal included in Science Citation Index has met the high standards of an objective evaluation process that eliminates clutter and excess and delivers data that is accurate, meaningful and timely.

Presidential Awards for Scientific Research scheme covers all the “hard” science title (excluded the social science) with a Sri Lankan address against at least one author given in the SCI.

This year the initiative part of the Presidential Awards for Scientific Research for year 2007, 2008 & 2009 has been completed. For these 3 years out of 573 publications 745 Sri Lankan scientists were identified. Calculation of Individual Cumulative Index for each Scientists and Cumulative Index for each Institute has been completed. Preparation of the reference books for each year with all the abstracts has been completed.

Progress during the year 2011

1st Quarter 2011

The Presidential Awards for Scientific Research (PASR) program is entirely based on the Science Citation Index (SCI). SCI is a database of the world's scientific periodicals judged to be the topmost by its publisher, with respect to quality and impact on science. Thus the SCI analyzed approximately 3800 journals containing a world total of about 1,200,000 titles of articles per year.

Referencing of the SCI index in Sri Lanka can be done either by purchasing the SCI Database CD and by subscribing to the online database. In Sri Lanka SCI-CD is available only at the National Library of Sri Lanka and could be used only for referencing and cannot be borrowed. This is mainly because of the high cost involved and the copy right issues.

The total number of publication for year 2007, 2008 & 2009 are follows, 274, 318 and 300.
The Council approved to following scheme as the baseline for years 2007, 2008 & 2009 awards.

Only publications figuring in the Science Citation Index with a Sri Lankan institutional address (solely or partly) will be considered for an award.

2nd Quarter 2011

Development of the database was in progress. The following steps were followed.

Selection of Publications for the nomination

The compilation done for the Research Award scheme covers all the “hard” science title (excluded the social science) with a Sri Lankan address against at least one author as given in the SCI. It is restricted to research publications after elimination of citations judged to be trivial, e.g. comments at a meeting, correspondence and replies, obviously non-research and un-refereed information etc.

Initially, the SCI index database was screened to separate the publications with Sri Lankan address in its address field. The screened data records were used to develop the database of publications, for Research Awards.

SCI CD can be search for :

- Title Word
- Author Name
- Cited Author/references
- Address word
- Full Journal title
- Abbr. Journal Title

For every search the following information will be downloaded from the database (SCI-List).

Present Clauses	Recommended Clauses	Decision
An index of 2.0 is allotted for each publication when only Sri Lankan Institution (s) appear in the address.	Same clause to be applied -	√
An index of 1.0 per publication when foreign institution(s) appears in the address.	At the 17th Council Meeting held on 11th January 2008 , it was decided to give an index of 1.5 for publication with foreign addresses, to encourage foreign collaboration in scientific research. This to be introduced from 2007 awards.	√
Letters and non-research publications judged as trivial were eliminated (Judges-)	Only articles to be considered. All review/letters/meeting abstracts etc. to be eliminated. (for 2003 to 2006 awards had 12 such publications)	Non-research articles to be eliminated
The index divided equally among all authors affiliated to each publication in calculating author index	Same clause to be applied -	√
Foreign authors affiliated foreign / local institute not eligible for awards	Same clause to be applied -	√
For author to be eligible to receive an award he/she needs to continue his/her activities in Sri Lanka until December next year. This clause is imposed to encourage researchers to stay in Sri Lanka (published from a Sri Lankan institute)	Due to the movement of scientists for various reasons; postgraduate studies, employment, sabbatical leave, migration, visiting scientists, dual citizenship etc. uncertain situations arise in some authorships. Some scientist are eliminated from the list but after few years they are back in the country employed in state sector/ visiting scientists and request for the certificates. Therefore for the present clause to be removed.	×
Sri Lankans (may be a Sri Lankan citizen or may not be) who publish with affiliation to a foreign institute are eliminated	Presently the government encourages, Sri Lankan living abroad to work in Sri Lanka, therefore international collaborative research should be encouraged. Sri Lankans (may be a Sri Lankan citizen or may not be) who publish with affiliation to a foreign institute to be considered for an award.	×

Names of the authors
Title
Full source
Language
Document type
Ids/book no.

No. related records
No. cited references
Cited references

Example from SCI

“Record 1 of 241

Authors: Shibayama-T Ashton-MS Singhakumara-B Griscom-HP Ediriweera-S Griscom-BW

Title: EFFECTS OF FIRE ON THE RECRUITMENT OF RAIN-FOREST VEGETATION BENEATH PINUS-CARIBAEA PLANTATIONS, SRI-LANKA

Abbrev. source: FOREST ECOL MANAGE 2007, Vol 226, Iss 1-3, pp 357-363

Document type: Article

No. cited references: 24

Addresses: YALE-UNIV, SCH FORESTRY & ENVIRONM STUDIES, NEW-HAVEN, CT 06511, USA
UNIV-SRI-JAYEWARDENEPURA, DEPT FORESTRY & ENVIRONM SCI, NUGEGODA, SRI-LANKA “

Since all the publications with Sri Lankan addresses are not recognized for the Awards, the data was screened again to identify pure research articles. Therefore the list was forwarded to the Council/Council Members nominated as judges to select the of research publications for its true nature of research. After the elimination of citations judged to be trivial, the rest of the research publications were recognized for awards. The decisions made by the judges was the final judgment.

3rd Quarter 2011

Identification of the authors

The SCI index merely gives names of the authors and the addresses of the authors in random form, and the names and address of the author cannot be co-related to identify author affiliation. Thus this requires a separate process to identify the author affiliation.

After selection of the publications, the full text of the publications were collected. This is the safest method to verify authors affiliation. By accessing the full publication via online or in print form the author's correct affiliation can be identified.

The full text of few articles can be accessed freely online, some articles can be found in Sri Lankan libraries. Some articles can be obtained on request from the authors by email. The remaining articles should be purchased or borrowed. By following all of the above methods the correct affiliations of the authors can be identified.

Identification of authors should be 100% accurate. The eligibility criteria were strictly adhered too, in listing the authors for an award. There were authors with similar names and initials, some publish with different initials, some author, though with Sri Lankan names are now affiliated to foreign institutes and/or citizens of other countries, therefore this process was done carefully.

4th Quarter 2011

Calculation of the Cumulative Index

The cumulative index is calculated for each scientist which is used in ranking scientists and also for preparation of cash award (may or may not be given).

The publication with a Sri Lankan institutional address (solely or partly) figuring in the SCI of a given year, have been considered for calculating the index of output (Cumulative Index-CI). An index of 2.0 is attributed to each publication when a Sri Lanka institution(s) is the only one figuring in the address (es). The index is 1.5 when a foreign institution(s) also appears in the address (es).

The index is divided equally among the authors affiliated to each of the publication, to obtain the individual index of a given author. The individual cumulative index is the total of such indices over a stated period of time (year to year).

Preparation of a Reference Book : A reference book was prepared for each year.

This gives all the publications of that year, as given in the CD along with the calculations.

The trivial should be identified. Judgment by the Council Members

The list of authors in an alphabetical was given and for each author all his/her Publications Reference No. should be stated with the index for each publications. The total index for each author should be stated.

It should also give reference to authors whose publications were taken as trivial and the Publication Reference No. The list of Journal in alphabetical order with type of document and Publication Ref. No. should be given.

Programs in Operation

Institution Evaluation Program

- Introduction
- Progress of the Program

Introduction

The evaluation of department of agriculture was completed during last year and review report was submitted to the H.E. the president with observations and recommendations during the year .

The evaluation of Department of Agriculture is a direct result made to the National Research council by Prof. Lalith Weerathunga, Secretary H.E. the President.

The NRC is empowered to carry out such reviews and evaluations under its mandate, section (iv) issued by H.E. the President dated 24th July 2007. Accordingly, members of NRC unanimously appointed five consultants to carry out this important task. The committee consists of Dr Parakrama Vaidyanatha Phd (London) chair person, Dr Nimal Sandaratne Phd (Wisconsin) Prof Buddhi Marambe Phd (Hiroshima) Mr Lakshman Fernando, Prof Janendre de Costa Phd (Reading) member of the NRC Council and Coordinator.

The review provides a critical analysis of present scenario of Research and Development and R&D activities in the research institutes of the Department of Agriculture. The reorganizations and restructuring of the research institutes and research to be undertaken to successfully meet the development targets identified in the “Mahinda Chinthana *Idiri Dekma*” have been identified and described in detail for implementation.

Progress during the period

1st Quarter 2011

The final review report of the Department of Agriculture was presented to the Council, and Prof. W. A. J. M. Costa, Coordinator to the review team gave a detail description of the review and the recommendations forwarded to the DoA. It was discussed in detail and a decision was made to present the report to the Secretary to the President.

As the report was finalized the type setting, graphic, designing of the text and printing was completed during this period by the NRC office. A summary report also was prepared on a request made by the Presidential Secretariat.

2nd Quarter 2011

The review report of the Department of Agriculture was handed over to the Secretary to the President on 19th April 2011 at the Presidential Secretariat. The Secretary commended the Review Report and call for a meeting with Ministry of Agriculture and the Department of Agriculture, to obtain their views on the report and discuss how the recommendations could be implemented. On 19th May 2011, the meeting was held at the Presidential Secretariat, with Mr. Lalith Weeratunga, Hon. Minister Mahinda Yapa Abeywardena, Minister for Agriculture, Mr. K. E. Karunatilake, the Secretary to the Ministry, and officials from the Department of Agriculture. The DoA agreed to implement the recommendations stated in the report.

3rd & 4th Quarter 2011

No other institute was referred to the NRC for review.

Programs in Operation

Media and Development Program

- Introduction
- Progress During the period

Introduction

The Application and promotion of research results will be the key function of this programme. The NRC will, through the relevant ministries/institutes, apply and promote research results obtained from the NRC grants, so that the nation may derive the maximum benefit.

The R & D Institutes Evaluation Program initiated in 2009, worked thorough out this year too, and the review report has been submitted to the Secretary to the President.

Several Programs were held during the past year under the Media and Development Program. The public awareness of research projects were started with “Dayata Kirula” development exhibition which was held at the Buttala, Monaragala under the patronage of Ministry of Technology and Research, in a commendable manner.

Many press and electronic media releases were made on research projects under the guidance and the coordination of the NRC during the period. . During the last six months , the few programs for on awareness on Leishmania and other water and vector borne discease in the Nort Central Province was held in the Anuradhapura district joining with the Vidatha centres of the Ministry of Technology and Research.

Progress during the period

1st - 4th Quarter 2011

Young Scientist Initiative Program

The applications were invited from junior researchers/undergraduates to participate in the Research for Young Scientists Program.

The program seeks to foster Research Culture in Sri Lanka by encouraging undergraduate and research students to participate in research activities to take up research as a career. The program is to facilitate young scientists to build collaborative relationships with top Sri Lankan researchers in Sri Lanka and mentoring researchers of National and International caliber.

Further the network of students created from the program will be lead to further development of interdisciplinary and collaborative research. The program consists of series of activities to develop research culture among undergraduates in an interdisciplinary approach of solving scientific problems of Sri Lanka which would leads to national development. It has mainly five modules and each module consists of activities and programs to enhance students research skills and capacity.

Module	1 –	Two one day work-shops: To Introduce research and development.
Module	2 –	Guest Lectures Series: On current research topics
Module	3 –	Field Training: - to give practical experience about field research in Sri Lanka.
Module	4 –	Laboratory training: - to give modern laboratory experience available in Sri Lanka
Module	5 –	Writing al Research Proposal

A total of 66 applications were received.

Dayata Kirula Development Exhibition :

The NRC participated at the *Dayat Kirula* Exhibition held at Buttala from 4 to 10th of February 2011. Three grantees exhibited their research activities , Prof.Rranjith Dissanayake NRC Grant 06-73, Prof. R P. V. J. Rajapakse NRC Grant 09-05, Dr. R. Samarasekara NRC Grant 05-10. Several grantees provided large poster explaining their research findings to the people. The NRC stall was well received by people who visited the exhibition. Several Scientists were actively involved in the stall along with their research students. A total of 20 students assisted us in conducting the programme.

Progress during the period

Dayata Kirula development Exhibition, Buttala, Sri Lanka



E- Awareness program- :

Development of the web- site continued.



Implementing Neonatal screening for Congenital Hypothyroidism in Monaragala District

Preliminary discussion on implementing Neonatal screening for Congenital Hypothyroidism in Monaragala District was held on 4th February 2011 at 10 30 a.m. in the District General Hospital, Monaragala. And the program was successfully implemented.

Congenital hypothyroidism is a condition that can be successfully treated if detected early to prevent severe mental retardation in later life. Intervention in early days of life is inexpensive and effective and extremely cost effective.

The Nuclear Medicine Unit of the Faculty of Medicine, University of Ruhuna has done a pilot study and followed it up with a feasibility study and has decided to provide diagnostic facilities for screening of neonates in the region for congenital hypothyroidism as part of the research grant received from National Research Council (NRC) of Sri Lanka. The Director General of Health Services of the Department of Health, by his circular (02-90/2010) dated 13.08.2010 has instructed to commence the Neonatal Screening for Congenital Hypothyroidism by Blood spot assay technique in all Government Health Institutions of the Southern Province. The inauguration of this landmark event was held on 21st September 2010 at the auditorium of the Faculty of Medicine, Karapitiya in the presence of Minister of Health Mr. Maithreepala Sirisena.

Since this service function is successfully established in the Southern Province, the Nuclear Medicine Unit is requested by the NRC to extend it to other parts of the country. Therefore, we have organized a preliminary discussion in the District General Hospital – Moneragala on 4th February 2011 at 10 30 a.m.

The representing team was as follows:

Dr. Manjula Hettiarachchi, Senior Lecturer of the Nuclear Medicine Unit, Faculty of Medicine, University of Ruhuna, who will be the representative for the Principal Investigator of the project, NRC 08-08 to discuss on the ground work that has to be done as a necessity in order to implement the proposed service in the Hospitals at Monaragala.

Prof. Sujeewa Amarasena, Department of Paediatrics, Faculty of Medicine, University of Ruhuna will emphasize the importance of this programme in resource poor settings

Dr. Sanjeewa Godakandage, Consultant Community Physician, and the focal point to the Family Health Bureau of the Ministry of Health, Sri Lanka for the Southern Province Newborn Screening Programme to share with the lessons learnt at the Health Department during the implementation of this programme in the Southern Province.

Mrs. Manisha C Rajapakse, Secretary/National Research Council

Dr. Manjula Hettiarachchi from the Faculty of Medicine, University of Ruhuna and Dr. Samanthi Welegoda, Consultant Paediatrician, District General Hospital, Monaragala and Mr NS Hewagama, Accountant/NRC and Mr SK Gamhewa, Assistant Accountant/NRC had coordinated the event .

Development Programs for Dayata Kirula Exhibition 2012

The following programs were conducted during the period in Anuradhapura district under this program. All the programs were organized jointly with Vidatha STO of Ministry of Technology and Research and NRC

1. Discussion and awareness seminar program for doctors and other health officials on vector and water borne infectious diseases in north central province.

The program was held at the National hospital, Kandy on 22rd September 2011. The Chairman/NRC, Prof E.H Karunanayake, Dr WMTB Wijekoon, Director, Teaching Hospital Anuradhapura, Dr Asoka Munasinghe, Provincial Epidemiologist, North Central Province, Prof SAM Kularatne, Professor of Medicine and Head of the Department of Medicine, Faculty of Medicine, University of Peradeniya, Peradeniya, Prof Ranjan Premarathne, Professor of Medicine and Head of the Department of Medicine, Faculty of Medicine, University of Kelaniya, Ragama, Emirates Professor NC Arsecularatne, Emirates Professor of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya Prof RPVJ Rajapakse, Professor of Parasitology, Department of Veterinary Medicine, Faculty of Animal Science, University of Peradeniya, Peradeniya also address the gatherings.

The program was specially designed to strengthen the awareness on water and vector borne diseases of health officials of the province.

2. Discussion and awareness workshop program for agricultural and field officials, samurdi officials, and other community and adult organizations personnel on vector and water borne infectious diseases in north central province.

Two programs were held in Nochchiyagama divisional secretariat and Thambuttegama divisional secretariat on 7th October 2011 and 21st October 2011 respectively. The Chairman/NRC, Prof E.H Karunanayake, Dr WMTB Wijekoon, Director, Teaching Hospital Anuradhapura, Dr Asoka Munasinghe, Provincial Epidemiologist, North Central Province, Prof SAM Kularatne, Professor of Medicine and Head of the Department of Medicine, Faculty of Medicine, University of Peradeniya, Peradeniya, Prof Ranjan Premarathne, Professor of Medicine and Head of the Department of Medicine, Faculty of Medicine, University of Kelaniya, Ragama, Emirates Professor NC Arsecularatne, Emirates Professor of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya Prof RPVJ Rajapakse, Professor of Parasitology, Department of Veterinary Medicine, Faculty of Animal Science, University of Peradeniya, Peradeniya also address the gatherings.

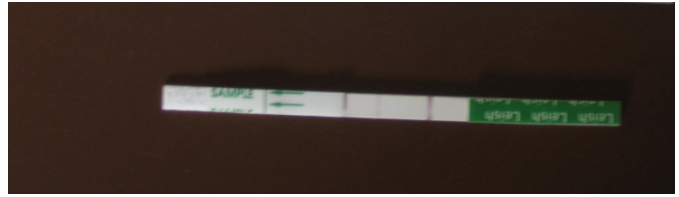


3. Social awareness program and a pilot epidemiological survey titled “determination of sero-prevalance in a community with active transmission of cutaneous leishmaniasis in Sri Lanka”

Two days program was held on 18th and 19th November 2011 in Thalawa. the program was conducted in collaboration with Dr Shalindra Ranasinghe, NRC grant 09-24, Department of Parasitology University of Sri Jayawardenepura, and Professor Greg Matlashewski (WHO Leishmaniasis Programme leader), Medical officers of MOH Office, Thalawa, and Provincial Health Directors office, Anuradhapura. The program was successfully held covering the Thalawa divisional secretariat and several suspected cases were identified and directed to further investigations immediately. Prof Renu Wickramasinge, Professor of Parasitology, University of Sri Jayewardenepura, Dr Shalindra Ranasinghe, University of Sri Jayewardenepura, Dr Asoka Mu-



Positive control; RDT results of confirmed VL patient from Vavuniya District showing strongly positive serum anti-*Leishmania* antibodies. RDT= Rapid Diagnostic Test.



RDT results from one patient attended the randomized community survey conducted in Talawa MOH division, Anuradhapura showing mild to moderate positivity to anti-*Leishmania* antibodies.



Leishmaniasis Program, Thalawa division, Anuradhapura District



nasinghe, Provincial Epidemiologist, North Central Province, Dr Sanjeewa Hulangamuwa, Teaching Hospital, Anuradhapura, Dr GKN Opathaella, Teaching Hospital, Anuradhapura, Dr SRR Bandara, MOH, MOH Office Thalawa and Dr VDK Senviratne, MOH, MOH Office, Thalawa , all the health officers and supporting staff of MOH Office, Junior Lecturers and Demonstrators of University of Sri Jayewardenepura, Provincial suwa sahan sewa officials of 17 thulans, Officials of NRC and the community of the area were participated to the event

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Held on Buttala-Sri Lanka in February

[illegible]

Financial Statements

Financial Statements 2011

NATIONAL RESEARCH COUNCIL -SRI LANKA

STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2011

	Notes	2011 Rs	2010 Rs
Revenue			
Recurrent receipts – NRC Administration	4-b	6,314,000.00	5,409,042.40
Recurrent receipts – Research and development	4-a	19,476,733.81	9,877,087.88
Other receipts		33,810.00	40,000.00
Total revenue		25,824,543.81	15,326,130.28
Expenses			
Personal emoluments		1,737,859.80	1,588,492.90
Research & development	4-a	19,476,733.81	9,877,087.88
Supplies and consumables		2,250,603.59	1,581,733.67
Depreciation and amortization expense –NRC Grants		15,057,436.03	13,597,163.87
Depreciation – NRC office equipments		343,425.17	880,188.64
Other expenses		5,093,893.05	2,589,793.17
Finance costs		13,394.25	114,329.46
Total expenses		43,973,345.70	30,228,789.59
Share of surplus of associate's		-	-
Surplus/(deficit) for the period		(18,148,801.89)	(14,902,659.31)
Attributable to:			
Owners of controlling entity		(18,148,801.89)	(14,902,659.31)
Minority interest		-	-
		(18,148,801.89)	(14,902,659.31)

Notes from the pages 05 to 10 form an integral part of these financial statements.

Figures in brackets indicate deductions

NATIONAL RESEARCH COUNCIL -SRI LANKA

STATEMENT OF FINANCIAL POSITION AS AT DECEMBER 31, 2011

	Notes	2011 Rs	2010 Rs
ASSETS			
Current assets			
Cash and cash equivalents		1,122,565.99	1,819,173.90
Receivables		150,896.00	241,742.00
Inventories			
Prepayments			
NRC grants		268,113,399.97	114,996,533.07
Other current assets			
		269,386,861.96	117,057,448.97
Non-current assets			
Receivables			
Investments in associates			
Other financial assets	5	105,000.00	130,000.00
Property, plant and equipment	6	119,496,763.03	109,726,350.68
Land and buildings			
Intangible assets			
Other non-financial assets			
		119,601,763.03	109,856,350.68
Total assets		388,988,624.99	226,913,799.65
LIABILITIES			
Current liabilities			
Payables	7	47,545.38	55,807.23
		47,545.38	55,807.23
Non-current liabilities			
Payables			
		-	-
Total liabilities		47,545.38	55,807.23
Net assets		388,941,079.61	226,857,992.42
NET ASSETS/EQUITY			
Capital contributed by other government entities			
Reserves			
Accumulated surpluses/(deficits)	8	388,941,079.61	226,857,992.42
Minority interest			
Total net assets/equity		388,941,079.61	226,857,992.42

The Council is responsible for preparation and presentation of these financial statements.

Signed for and on behalf of the Council,

.....
Prof. E. H. Karunanayake
(Chairman NRC)

February, 28, 2011

NATIONAL RESEARCH COUNCIL -SRI LANKA

CASH FLOW STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2011

	2011 Rs	2010 Rs
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts		
Taxation		
Receipt from treasury (recurrent + development assistance)	206,314,000.00	65,409,042.40
Sales of goods and services		
Receipts from closed grants	13,099,174.56	6,323,809.21
Interest received		
Other receipts	124,656.00	5,000.00
Payments		
Cash payment to employees	(1,737,859.80)	(1,598,968.43)
Superannuation		
Suppliers		
Research grants	(213,262,709.05)	(64,476,585.26)
Interest paid		
Other payments	(4,452,050.85)	(4,110,664.49)
Net cash flows from operating activities	(85,210.86)	1,551,633.43
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of plant and equipment	(781,818.77)	
Proceeds from sale of plant and equipment		
Proceeds from sale of investments		
Purchase of foreign currency securities		
Net cash flows from investing activities	(781,818.77)	-
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds from borrowings		
Repayment of borrowings		
Distribution/dividend to government		
Net cash flows from financing activities	-	-
Net increase/(decrease) in cash and cash equivalents	(696,607.91)	1,551,633.43
Cash and cash equivalents at beginning of period	1,819,173.90	267,540.47
Cash and cash equivalents at end of period	1,122,565.99	1,819,173.90

Notes from the pages 05 to 10 form an integral part of these financial statements.

Figures in brackets indicate deductions

NATIONAL RESEARCH COUNCIL -SRI LANKA

STATEMENT OF CHANGES IN NET ASSETS/EQUITY FOR THE YEAR ENDED DECEMBER 31, 2011

	Accumulated Surplus or Deficit	Total	Total net Assets / Equity
	Rs	Rs	Rs
Balance as at December 31, 2010	226,857,992.42	226,857,992.42	226,857,992.42
Adjustment to opening balance	(100,431.11)	(100,431.11)	(100,431.11)
Changes in accounting policy			
	<u>226,757,561.31</u>	<u>226,757,561.31</u>	<u>226,757,561.31</u>
Change in net asset/equity for 2011			
Gain on property revaluation	(190,946.00)	(190,946.00)	(190,946.00)
Loss on revaluation of investments			
Exchange differences on translating			
foreign operations			
Net of revenue recognized directly in net asset/equity	180,523,266.19	180,523,266.19	180,523,266.19
Surplus/ (deficit) for the period	<u>(18,148,801.89)</u>	<u>(18,148,801.89)</u>	<u>(18,148,801.89)</u>
Total recognized revenue and expenses for the period			
Balance at December 31, 2011 carried forward	<u>388,941,079.61</u>	<u>388,941,079.61</u>	<u>388,941,079.61</u>

Notes from the pages 05 to 10 form an integral part of these financial statements.

Figures in brackets indicate deductions

NATIONAL RESEARCH COUNCIL -SRI LANKA

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

ACCOUNTING POLICIES

1. REPORTING ENTITY

National Research Council (NRC) is established as a special agency by a Presidential Directive under the article 33 of the constitution by the extra ordinary gazette notification No. 1514/28. The National Research Council is located at 380/72, Baudhdhaloka Mawatha, Colombo 07. The financial statements are prepared for a common financial year, which ends on 31st December.

2. BASIS FOR PREPERATION

2.1 STATEMENT OF COMPLIANCE

The financial statements have been prepared in accordance with generally accepted accounting principles and practices

2.2 BASIS OF MEASUREMENT

The financial statements have been prepared on the basis of historical costs in accordance with accepted accounting principles and no adjustment has been made for inflationary factors affecting these accounts.

2.3 FUNCTIONAL AND PRESENTATION CURRENCY

The financial statements are presented in Sri Lankan Rupee, is the functional currency of NRC. All financial information presented in Sri Lankan rupee has been given to the nearest cent, unless stated otherwise.

2.4 USE OF ESTIMATES AND JUDGEMENTS

The presentation of financial statements in conformity with SLAPs requires managements to make judgments, estimates, and assumptions that affect the application of accounting policies and reported amounts of assets, liabilities,

income and expenses. Judgments and estimates are based on historical experience and other factors, including expectations that are believed to be reasonable under circumstances. Hence actual experience and results may differ from these judgments and estimates.

Estimates and underlying assumptions are reviewed at an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised if the revision affects only that period and any future periods affected

3f3. SIGNIFICANT ACCOUNTING POLICIES

The accounting policies set out below are consistent with those used in previous year.

Certain comparative information has been reclassified wherever necessary to conform to the current year's presentation.

3.1 FOREIGN CURRENCY

All foreign exchange transactions have been converted in to functional currency at the rates of exchange prevailing at the date the transactions were effected.

3.2 ASSETS AND BASES OF THEIR VALUATION.

Assets classified as current assets on the balance sheet are cash and bank balances and those which are expected to be realized in cash during the normal operating cycle or within one year from the reporting date, whichever is shorter.

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

3.2.1 PROPERTY PLANT AND EQUIPMENT

3.2.1.1 RECOGNITION AND MEASUREMENT

Items of property plant and equipment are measured at cost less accumulated depreciation. The cost of property plant and equipment includes the cost of purchase or construction together with any incidental expenses that are directly attributable to the acquisition or construction of assets and to bringing any assets to a working condition for its intended use, and cost of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of related equipment is capitalized as a part of that equipment. When parts of an item of property plant and equipment have different useful lives, they are accounted for as separate items of property plant and equipment.

Property plant and equipment purchased from NRC research grants are identified as part of property plant and equipment of NRC temporarily until they transferred or disposed.

3.2.1.2. SUBSEQUENT COSTS

The cost of replacing part of an item of property, plant & equipment is recognized in the carrying amount of the item if it is probable that the future economic benefits are embodied within the part will flow to the NRC/NRC grants and its cost can be measured reliably. The carrying amount of the replaced part is derecognized when no future economic benefits are expected from its use or disposal. Gains and losses of such are recognized in profit and losses and gains are not classified as revenue.

The cost to day to day servicing of property plant and equipment are recognized in profit and loss as incurred.

3.2.1.3 DEPRECIATION

The depreciation is recognized in profit and loss calculated on the cost of fixed assets in order to

write off such cost over the estimated useful life provided Full year's depreciation in the year of disposal while no depreciation is provided in the year of purchase.

The estimated useful lives and percentages for current and comparative periods are as follows:

Sundry assets	2 years	50.00%
Cutlery & Crockery	3 years	33.33%
Room linen	3 years	33.33%
Safety Equipment	3 years	33.33%
Library books	3 years	33.33%
Computers, Printers, and Accessories	5 years	20 %
Calculators & Clocks	5 years	20 %
Power supply equipment	5 years	20 %
Brass item	5 years	20 %
Motor vehicles	5 years	20 %
Air conditioners/Safes	10 years	10 %
Building	10 years	10 %
Expandable assets	10 years	10 %
Machinery & Tools	10 years	10 %
Office equipment	10 years	10 %
Refrigerators	10 years	10 %
Internet installation	0	

The estimated useful values of property plant and equipment purchased from research grants are depreciated until they are transferred or disposed based on following useful lives and percentages for current and comparative periods.

Lab equipment (Section 1)	10 years	10 %
Lab equipment (Section 2)	5 years	20%

Depreciation methods, useful lives and residual values are reassessed at the reporting date.

3.2.2. INTANGIBLE ASSETS AND AMORTIZATION

An intangible asset is recognized if it is probable that future economic benefits that are attributable to the assets will fall to the NRC and the cost of

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

the asset can be measured reliably. These assets are stated in the in balance sheet at cost less accumulated amortization. Amortization is recognized in profit and loss on straight line basis over the estimated useful lives of intangible assets from the date on which they are available to use.

3.2.3. INVENTORIES

Inventories are measured at historical cost basis.

3.2.4. TRADE AND OTHER RECEIVABLES

Trade and other receivables are stated at their estimated realizable amounts.

3.2.5. NRC GRANTS

NRC grants represent the total amount accumulated over the years of awarded research grants.

Expenditure incurred from NRC grants are recognized as an expense in the income statement in the period in which they are incurred, except to the extent that they are directly attributable to acquisition, construction or production of assets, in which case they are identified as part of property plant and equipment until they are transferred or disposed

The funds received for research grants are capitalized directly to accumulated funds and the expenditure incurred except to acquisition, construction or production of assets are recognized in the income statement in year in which the expenses are incurred.

The expenditure from NRC grants identify as expenses incurred are recognized as part of recurrent receipt in income in the income statement in the respective periods in which the expenses are recognized.

3.3 LIABILITIES AND PROVISIONS

Liabilities classified as current liabilities on the balance sheet are those which fall due to payments on demand or within one year from the

reporting date. Noncurrent liabilities are those balances fall due for payment later than one year from the reporting date.

All known liabilities as at the date of the Balance Sheet have been accounted for in preparing the financial statements.

3.3.1. EMPLOYEE PROVIDENT FUND AND EMPLOYEE TRUST FUND

EPF deductions are as follows:

Employer	12%
Employee	8%

ETF deduction is as follows:

Employer	3%
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3.3.2. TRADE AND OTHER PAYABLES

Trade and other payables are stated at their cost.

3.4. INCOME STATEMENTS

For the purpose of presentation of the income statement, the nature of expenses method is adopted.

3.4.1 REVENUE

Government Grants received during the year under review towards recurrent and capital expenditure have been recognized to income statement and accumulated funds respectively. The expenditure from NRC grants identify as expenses incurred are recognized as part of recurrent receipt in income in the income statement in the respective periods in which the expenses are recognized.

Gains and losses on disposal or transfer of items of property plant and equipment are determined by comparing the net sales or transfer proceeds with carrying amounts of property, plant and equipment and are recognized in profit and loss.

3.4.2. EXPENDITURE

All expenditure incurred NRC operations has been charged to income in arriving at the profit /loss of the year. Repairs and renewals are

NATIONAL RESEARCH COUNCIL -SRI LANKA

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

charges to profit and loss in the year in which the expenditure is incurred.

Expenditure from NRC grants is also recognized as research and development expense in the income statement in the period in which they are incurred, except to the extent that they are directly attributable to acquisition, construction or production of assets, in which case they are identified as part of property plant and equipment. Finance income and expenses comprises of gains and losses of translation of foreign currency are recognized in profit and loss as it occurs.

3.5. GENERAL

3.5.1 EVENTS AFTER THE BALANCE SHEET DATE

All material post balance sheet events have been considered and where appropriate adjustments or disclosures have been made in the respective notes in the financial statements.

3.6 CASH FLOW STATEMENT

Cash flow statement has been prepared using the direct method.

NATIONAL RESEARCH COUNCIL -SRI LANKA

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

NOTE 04 - RECURRENT RECEIPTS

4-a RESEARCH & DEVELOPMENT

	2011 Rs.	2010 Rs.
Grantees' Consumable	14,471,341.73	8,827,387.69
Grantees' Documentation	-	180,140.11
Grantees' PhD Stipend	4,071,126.07	
Grants & Programs Administration	894,953.45	
Grantees' Travelling	39,312.56	869,560.08
.	19,476,733.81	9,877,087.88

4-b TREASURY RECURRENT RELEASE

2010 January	607,000.00	600,000.00
2010 February	1,600,000.00	500,000.00
2010 March	153,000.00	500,000.00
2010 April	867,000.00	500,000.00
2010 May	258,000.00	-
2010 June	320,000.00	854,000.00
2010 July	577,000.00	870,000.00
2010 August	150,000.00	130,000.00
2010 September	633,000.00	700,000.00
2010 October	200,000.00	300,000.00
2010 November	470,000.00	130,000.00
2010 December	479,000.00	335,000.00

Funds Returned to Treasury	-	(9,957.60)
	6,314,000.00	5,409,042.40

Total Amount	25,790,733.81	15,286,130.28
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5 - OTHER FINANCIAL ASSETS

	2011 Rs.	2010 Rs.
Building Rental Deposit	90,000.00	90,000.00
Telecommunication Deposit	15,000.00	
Transport Deposit	-	40,000.00
Total	105,000.00	130,000.00

NATIONAL RESEARCH COUNCIL -SRI LANKA

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2011

6 - PROPERTY, PLANT AND EQUIPMENT

	2011	2010
Cost	Rs.	Rs.
NRC Office Assets	7,218,522.05	6,436,703.28
Grants' Major Equipment	171,890,083.52	151,297,576.72
Grants' Minor Equipment	8,182,411.80	7,596,147.97
Total - Assets	187,291,017.37	165,330,427.97
Less : Provision for Depreciation		
NRC Office Assets	5,339,961.77	4,996,536.60
Grants' Major Equipments	59,185,072.99	47,965,362.09
Grants' Minor Equipments	3,269,219.58	2,642,178.60
Total - Provision for Depreciation	67,794,254.34	55,604,077.29
Total Net Assets	119,496,763.03	109,726,350.68

7 - PAYABLES

	2011	2010
	Rs.	Rs.
Telecommunication Payable	31,876.24	39,025.29
Electricity Charges Payable	15,151.70	16,264.50
Water Charges Payable	517.44	517.44
EPF Payable	-	-
ETF Payable	-	-
Total	47,545.38	55,807.23

8 - ACCUMULATED FUND -SURPLUS/ (DEFICIT)

	2011	2010
	Rs.	Rs.
Accumulated Fund - surplus / (deficit)	407,089,881.50	241,760,651.73
Add : Expenditure over Receipts	(18,148,801.89)	(14,902,659.31)
Total	388,941,079.61	226,857,992.42

Auditor General's Report

Auditor General's Report



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கணக்காய்வாளர் தலைமை அறிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT



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எனது இல } EL/F/NRC/FA/2011
My No }

ඔබේ අංකය }
உமது இல }
Your No. }

දිනය }
திகதி } 3 September 2012
Date }

Chairman
National Research Council

Report of the Auditor General on the Financial Statements of the National Research Council for the year ended 31 December 2011 in terms of Section 14(2)(c) of the Finance Act No. 38 of 1971

The audit of financial statements of the National Research Council comprising the balance sheet as at 31 December 2011 and the income statement, statement of changes in equity and cash flow statement, for the year 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 the Extra-ordinary Gazette No.1514/28 of 15 September 2007. 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 Council on 28 May 2012.

1.2 Establishment of the Council

The Council had been established by the Extra-ordinary Gazette No. 1514/28 dated 15 September 2007 by the Honorable President of the Democratic Socialist Republic of Sri Lanka, to assist the Government to plan, coordinate and facilitate research in sciences and Technology so as to build a vibrant national scientific and technological community in the country to derive the maximum benefit.

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බත්තරමුල්ල, ශ්‍රී ලංකාව

දුරකථනය }
தொலைபேசி } 2887028 -34
Telephone }

இல. 306/72, பொல்துவ வீதி,
பத்தரமுல்லை இலங்கை

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ஈ-மெயில் } oaggov@sltnet.lk
E-mail. }

1.3 Management's Responsibility for the Financial Statements

The management is responsible for the preparation and fair presentation of the financial statements in accordance with Generally Accepted Accounting Principles 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.

1.4 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. These 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 judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessment, the auditor considers internal control relevant to the Council'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 Council'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 the 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.

1.5 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 Research Council as at 31 December 2011 and its financial performance and cash flows for the year then ended in accordance with Generally Accepted Accounting Principles.

2.2 Comments on Financial Statements

2.2.1 Best Accounting Practices

The provision for depreciation had not been made for the fixed assets valued at Rs. 781,819 which were purchased during the year under review.

2.2.2 Non-compliance with Laws, Rules, Regulations and Management Decisions.

The following non-compliances were observed.

Reference to Laws, Rules, Regulations etc.	Non-compliance
<hr/>	<hr/>
(a) Extra- Ordinary Gazette No. 1514/28 of 15 September 2007	Action had not been taken to create the systems of National level Recognitions, and Rewarding the Successful Researchers and Modifications,

and the "Presidential Awarding Ceremonies" had not been held for the years from 2007 to 2010.

(b) Employees Provident Fund Act No.15 of 1958 and Employees Trust Fund Act No.46 of 1980.

(i) Even though the cost of living allowance should be considered when making the contributions the relevant Funds, the contributions of 4 employees had been computed on the basis of their salary without considering the cost of living allowance.

(ii) The contributions of 2 officers served on assignment basis had not been paid to the relevant funds.

(c) Treasury Circular No. 842 of 19 December 1978.

The Fixed Assets Register had not been maintained as specified.

2.2.3 Irregular Transactions

The following observations are made.

(a) The fixed assets valued at Rs. 781,819 had been purchased to the Research Council out of the funds received as research grants.

(b) (i) The expenditure had been incurred for fuel and transport during the year under review as follows.

	Rs.
Chairman's Fuel Allowance	217,500
Reimbursement of Fuel	388,874

	606,374
	=====

In addition to that, transport expenditure amounting to Rs. 149,750, transport charges for inventory checking amounting to Rs. 103,950 and transport expenditure for the exhibition "Dayata Kirula" amounting to Rs.133,275 had been incurred. When assessing the staff and the duties of the Council, it was observed that the huge amount had been spent for the transport.

- (ii) As the Daily Running Charts had not been properly maintained, it could not be examined the accuracy of the usage of fuel.

3. Financial Review

3.1 Financial Result

According to the financial statements presented the working of the Council for the year ended 31 December 2011 had resulted in a deficit of Rs. 18,148,802 as compared with the corresponding deficit of Rs. 14,902,659 for the preceding year thus indicating a decrease of financial results by Rs. 3,246,143. The increase of other expenses by Rs. 2.5 million and increase of depreciation and amortization by Rs. 1 million had been the main reasons affected for this.

4. Operating Review

4.1 Management Inefficiencies

Following observations are made.

- (a) Action had not been taken to transfer to the respective research institute or taken back to the National Research Council the fixed assets/ equipments valued at Rs. 20,890,325 purchased out of the Research Grants received in 2000/ 2001 in respect of 10 projects completed.

- (b) According to Section 5 of Research Grant Agreement the details regarding research equipment given to Researchers should be recorded in an Inventory Register while Chief Researcher, an officer of the Research Council and a responsible officer of the Council should be signed in the Register. Nevertheless action had not been taken accordingly, in respect of research equipment valued at Rs. 28,296,195 purchased during the year under review.
- (c) The duration of the following projects had completed and the bank accounts also got closed but the final Research Reports had not been furnished.

Project No.	Date of the Commencement of the Project	Date of the Project to be Completed	Value of the Project Grant
05-66	15 July 2006	15 July 2009	1,997,222
06-22	01 April 2008	01 April 2011	2,299,611
06-65	01 Nov 2007	29 Nov 2010	549,000
07-10	30 Dec 2009	30 March 2011	3,629,000
			8,474,833

4.2 Idle and Under-utilized Assets

The following observations are made.

- (a) A sum of Rs. 208,075,203 had been deposited in the current accounts for 51 Research Projects in the year under review. Out of this a sum of Rs.1,269,919 only had been utilized even by 31 December 2011 and it was 0.61 per cent out of the total amount and no ^{any} amount had been utilized by twelve researchers who obtained a sum of Rs. 40,463,000 for research work.

- (b) Instances were observed that some Researchers who obtained Research Grants had abandoned the projects. The approved total amount had been credited to a bank account in the name of the respective Research Project at the inception of the grant given to the Researcher and due to abandonment of the Research a long period had been taken to close the account or transfer the funds and equipment for another project. Therefore the funds had been remained idle in the accounts ranging from 3 to 4 years. Details are shown below.

Grant No	Amount Banked	Date of the Commencement of Bank Account	Date of the Bank Account Closed	Period of the Cash Idle in the Bank Account
05-18	439,800	19 June 2006	15 Sep. 2010	4 years 3 months
06-41	1,998,000	17 Nov. 2007	17 Dec. 2011	4 years 1 month
06-52	1,139,186	17 Nov. 2007	25 March 2010	2 years 4 months
06-54	831,917	17 Nov. 2007	25 March 2010	2 years 4 months
07-48	2,299,000	25 May 2009	17 Dec. 2011	2 years 7 months
07-57	2,550,000	25 May 2009	09 Sep. 2011	2 years 4 months
08-44	2,335,000	29 Nov. 2010	17 Dec. 2011	1 year 1 month
09-44	1,697,740	19 Jan. 2009	29 Aug. 2011	2 years 7 months
09-11	2,896,000	29 Nov. 2010	17 Dec. 2011	1 year 1 month
09-32	1,700,000	18 Oct. 2010	17 Dec. 2011	1 year 2 months

4.3 Identified Losses

Spectrometer purchased at Rs. 1,219,000 given to the University of North-Western for the Research Project Grant No. 5.29 had mal-functioned and it was returned back to the respective institution on 20 July 2009 and Rs. 150,896 had been outstanding even as at 31 December 2011. The amount of Rs. 159,000 paid

as Value Added Tax when the machine was purchased could not be recovered and that amount had been written off to the Income/ Expenditure Account.

5. Accountability and Good Governance

5.1 Meetings of Board of Directors

Only 4 meetings had been conducted in the year under review .

5.2 Corporate Plan

A Corporate Plan had not been prepared to achieve the Vision and Mission of the National Research Council.

5.3 Action Plan

Even though the Action Plan had been prepared, that had not been prepared to covered the all activities of the Council.

5.4 Internal Audit

The Internal Audit Unit had not been established while the assistance of the internal audit unit of the Ministry had been obtained for the internal audit purposes.

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) Research Grants
- (b) Control over the Vehicles

H.A.S. Samaraweera
Auditor General