

ANNUAL REPORT 2000



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NATIONAL SCIENCE FOUNDATION
SRI LANKA

National Science Foundation
47/5, Maitland Place
Colombo 07.

07.10.2002

Hon. Minister of Economic Reform, Science and Technology
Ministry for Economic Reform, Science and Technology
Alvitigala Mawatha
Colombo 05.

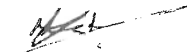
Dear Sir,

**Annual Report of the National Science Foundation for the period
1st January to 31st December, 2000**

In terms of Section 40(3) of Science and Technology Development Act No. 11 of 1994, I have the honour to submit the Annual Report of the National Science Foundation for the period 1st January to 31st December, 2000 together with

- (a) A copy of the Audited Income and Expenditure Accounts
- (b) A copy of the Audited Balance Sheet
- (c) Auditor Generals Report

Yours sincerely,



M Watson
Director
National Science Foundation

Table of Contents

Introduction	1
Sponsorship of Scientific Research	3
Seminars and Workshops	5
Significant Research Findings	12
Publications	17
International Scientific Activities	20
Other Activities	24
Sri Lanka Scientific and Technical Information Centre	28
Seminars, Conferences, Meetings, Workshops Attended by Staff	29
Staff Development and Training	33
Board of Management	35
Principal Staff	36
NSF Working Committees	38
Annexes	41
Final Accounts	57
Auditor General's Report	71
Comments on the Auditor General's Report	84

Introduction

Historical Background

The National Science Foundation (NSF) is a state funded institution established by the Science and Technology Development Act, No. 11 of 1994 on 01/04/1998 under the Ministry of Science and Technology. It is the successor to the Natural Resources, Energy and Science Authority of Sri Lanka (NARESA) which was set up in 1982 by Parliament Act No. 78 of 1981. NARESA itself succeeded the National Science Council (NSC) which was established by Act No. 9 of 1968.

Management

The NSF is governed by a Board of Management which consists of the Chairman, Director and Members appointed by the Hon. Minister of Science and Technology. The Director functions as the Chief Executive of the institution.

Objectives

- (a) to initiate, facilitate and support basic and applied scientific research by universities, science and technology institutions and scientists, with a view :
 - (i) to strengthening scientific research potential, including research in the social sciences, and science education programmes;
 - (ii) to developing the natural resources of Sri Lanka;
 - (iii) to promoting the welfare of the people of Sri Lanka and
 - (iv) to training research personnel in science and technology
- (b) to foster the interchange of scientific information among scientists in Sri Lanka and foreign countries;
- (c) to award scholarships and fellowships for scientific study or scientific work at science and technology institutions;
- (d) to maintain a current register of scientific and technical personnel, and in other ways to provide a central clearing house for the collection, interpretation and analysis of data, on the availability of, and the current and projected need for, scientific and technical resources in Sri Lanka, and to provide a source of information for policy formulation on science, technology and other fields;
- (e) to popularise science amongst the people by funding programmes for that purpose.

Summary of Financial Status – 2000

• Amount requested for consolidated funds	-	Rs. 43 886 630.00
• Amount approved by the Treasury	-	Rs. 32 000 000.00
• Amount requested for recurrent expenditure	-	Rs. 32 639 263.00
• Amount approved by the Treasury	-	Rs. 20 715 000.00
• Approved foreign aid estimate	-	Rs. 29 000 000.00

However, NSF was requested to save 6% of budgetary provisions made for recurrent expenditure except for salaries & wages, medical supplies, welfare payments, pensions and diets, by adjusting the expenditure without interruption of the operations.

Audit and Management Committee

Under the provision of the Finance Circular No. PF/PE 7 dated 15.03.2000 issued by the General Treasury, the Board of Management appointed the following to serve as members of the Audit and Management Committee.

Prof. A. D. V. de S. Indraratna (Chairman)
 Prof. Uma Coomaraswami
 Ms. S. C. Perera
 Mr. M. Watson (Director – NSF)
 Mr. M. H. M. S. Hamid (Internal Audit – NSF)

During the year 2000 the Committee held five meetings and the outcome was reported to the Board of Management.

Sponsorship of Scientific Research

Research Grants Scheme

The award of research grants is one of the main activities of the NSF to promote scientific and technological research in the country. The NSF entertained applications for research grants throughout the year with a rolling deadline. This facilitated the scientists to obtain funds for their research activities as and when the need arose.

These applications are screened and evaluated by the NSF Working Committees. The Working Committees are made up of eminent scientists of different disciplines drawn from universities and public/private sector institutions. Based on their recommendations these applications are forwarded to the Board of Management for approval.

Research grants awarded are monitored regularly through half-yearly progress reports. In addition, progress review seminars are held where grantees make presentations based on the work carried out under the project. This gives them the opportunity to clarify problems faced by them and carry out the research work more effectively. Working Committee members visit the project sites in some cases with a view of ascertaining the work done by the grantees.

Once the research project is completed, a final report is submitted by the grantees which is evaluated by a specialist or a panel of specialists appointed by the Working Committee. The evaluation takes into account any postgraduate degrees awarded to personnel associated with the project and also the intrinsic scientific contributions made towards widening the horizons of knowledge and/or application of science and technology for development.

Summary of information about the Research Grants Scheme for the year 2000 is given below. Details of grants awarded in year 2000 are given in the annexes.

On going grants as at 31.12.2000	- 135
Grants awarded in 2000	- 20
Amount allocated for new grants during 2000	- Rs. 7,851,763.00
Grants Completed	- 41
Research Students appointed	- 21
No. of Research Students registered for postgraduate degrees	- 14
No. of publications & communications arising from grants	- 67
Postgraduate theses received	- 06
• Ph.D. - 01	
• M.A. - 01	
• M.Sc. - 04	

The NSF initiated three new schemes in year 2000 to promote research and developmental activities in the Country. Applications were called through a Newspaper advertisement.

Block Grants Scheme

The block grants provide funds upto Rs. 500,000 for a period of one year to supplement the research funds of Universities and Research Institutions and are meant to be used for consumables, research/technical assistants and field related expenses. Applications were called from Deans of Faculties and Heads of Research Institutes. Consequently 29 applications were received and 12 grants were awarded during the year 2000 (details given in the annexes).

Support for Research Equipment

Noting the fact that most of the research activities are held up due to the non-availability of research equipment, the NSF initiated a scheme to provide funds upto one million rupees to purchase laboratory equipment. Applications were called from Departmental Heads of universities and Heads of Institutions. More than 35 applications were received. Selection was based on the need for equipment for ongoing research programmes, upgrading the laboratory and the availability of skilled personnel for operation and maintenance of the equipment. Preference was given to requests for equipment to be used by multidisciplinary groups of scientists. Nine grants were approved for award in the year 2001.

Seed Funding

The Seed Funding scheme was initiated in order to promote multidisciplinary and multi-centre research projects. Interested scientists were requested to write to the NSF with the proposed research project and a brief background and justification. An honorarium of Rs. 15,000 will be paid on submission of final research proposals in a form acceptable to the NSF. Travelling and other approved expenses incurred during the preparation of the proposal will be reimbursed upto an upper limit of Rs. 10,000. Fourteen applications were received for consideration under this scheme and the Board of Management requested the relevant Working Committees to evaluate them. Selected applicants will be requested to develop full proposals.

Seminars and Workshops

A number of seminars, workshops and conferences were organized by the NSF during the year 2000 in order to initiate interaction among scientists, researchers and policy makers. This would enable them to share experiences, update knowledge and pave the way for the NSF to emerge as a very strong platform for development of scientific dialogue and a channel for efficient dissemination of science and technology information.

✧ *Progress Review Seminars*

As part of the monitoring process of research projects, NSF held several Progress Review Seminars to evaluate the progress of ongoing projects, in different disciplines. The Working Committee members of the relevant fields, grantees and invited scientists participated in them. The expert comments of eminent scientists are much valued in conducting research work more efficiently and effectively. The details of the progress Review Seminars held during year 2000 are given below.

<i>Discipline</i>	<i>Date</i>	<i>No. of Presentations</i>
<i>Agricultural Science & Forestry</i>	<i>21st July</i>	<i>07</i>
<i>Biotechnology</i>	<i>22nd September</i>	<i>10</i>
<i>Biological Sciences</i>	<i>27th October</i>	<i>06</i>
<i>Physical & Mathematical Sciences</i>	<i>16th November</i>	<i>09</i>
<i>Health Sciences</i>	<i>24th November</i>	<i>06</i>

The Working Committee on Social Sciences took steps to expand the progress review seminars meant for ongoing grants, by including presentations by prospective grantees whose research proposals were being considered or had just received approval. Two such seminars were held on 11th August (05 presentations) and 13th November (06 presentations).

✧ *Theme Seminars, Workshops, Conferences...*

- Theme : **Earthquakes and How to Face them**
- Date : March 21, 2000
- Venue : NSF

Prof. Kapila Dahanayake, Chairman, NSF chaired this press conference which was attended by media personnel of different organizations and the staff of NSF. The Chairman briefed the participants on the phenomena of earthquakes, their occurrence and relevance to Sri Lanka. Mr. Basil Fernando, Director, National Disaster Management Center, Mr. Udeni Amarasinghe, Lecturer, University of Peradeniya, Mr D. A. Kastriarachchi, Mr. S. M. T. B. Mudunkotuwa, Deputy Directors of Geological Survey and Mines Bureau, participated as resource persons.

- Theme : **The Role of Media in Strengthening Science and Technology in Developing Countries.**
 Date: : March 29, 2000
 Venue : NSF

This seminar was organized to coincide with the visit of Swedish journalist Mr. Anders Ingvarsson. Prof. Kapila Dahanayake, Chairman, NSF delivered the welcome speech. The audience consisted of Journalists (Science and Technology disciplines), Scientists and Researchers from Universities and Research Institutions. Distinguished journalists Mr. Edwin Ariyadasa, Mr. Thusitha Malalasekera and Dr. Upali M. Senanayake discussed key issues relating to media - health sector relationship and science and technology communication. Mr. Anders Ingvarsson explained how they work in Sweden in disseminating research and technology information that contribute to the country's economic development. The reasons for the lack of proper understanding between the journalists and scientists/researchers were highlighted during the general discussion. The need to train Sri Lankan journalists to assess information through electronic media and the importance of competence in the English language for doing so were stressed in this seminar.

- Theme : **Alternative Materials for the Construction Industry**
 Date: : May 12, 2000
 Venue: : Hotel Lanka Oberoi, Colombo

The NSF in collaboration with the Ceylon National Chamber of Industries (CNCI) organized this seminar consequent to a decision of the Natural Resources Committee of the NSF. The purpose was to promote alternative materials as substitutes for coral lime, timber, river sand etc., in order to stop exploitation of these resources and thereby to protect the environment. Architects, Engineers, Industrialists, NGOs and Government Institutions involved in environmental protection work participated in the seminar. Effects of the construction industry on the environment, steps taken to prevent adverse effects, with special emphasis on alternative materials were some of the themes discussed. Special concern was given to alternative material such as polymers and composite materials, cement door and window frames, cement stabilized soil blocks, clay blocks, micro concrete tiles, semi sheets, fiber reinforced clay tiles and salt of vinsol resin as a substitute for coral lime. One of the important decisions taken was that the NSF, together with Industrial Technology Institute (ITI) and the Ministry of Science and Technology should take steps jointly to improve the techniques used in the dolomite industry, as an alternative for coral lime and to get the support of the private sector as much as possible in these development.

- Theme : **Scientific Writing**
 Date : 23 - 24 June, 2000
 Venue : NSF

This two day workshop was organized by the Working Committee on Agricultural Science and Forestry of the NSF. Thirty junior scientists and researchers nominated by Universities, Research Institutions and the Departments of Agriculture participated. A panel of selected experts delivered lectures on important components of a research article. A demonstration showing the use of CD ROM in literature survey was also conducted. A practical session with group discussions was held on the second day. The workshop was evaluated by the participants themselves and there were many requests for continuation of this type of workshops in future.

- Theme : **Postgraduate Education and Research in Science**
- Date : June 30,2000
- Venue : NSF

This workshop was jointly organized by the NSF and the Postgraduate Institute of Science (PGIS), Peradeniya. Prof. Kapila Dahanayake, Chairman, NSF and Director, PGIS, welcomed the guests and explained the objectives and the status of activities of the PGIS. Several presentations were made on postgraduate programmes offered and research conducted by universities. Some of the eminent researchers of the universities and the Deans of the Faculties of Science participated in the discussion. The importance of interaction between industrial managers and researchers, importance of establishing R & D centres and commercialization of research findings were highlighted. At the conclusion of the workshop the participants emphasized the need for a meeting between researchers and industrial managers to discuss the importance of research and development work in industry.

- Theme : **Technology Education**
- Date : August 8 ,2000
- Venue : NSF

This seminar, organized by the NSF Working Committee on Science Education & Popularization, was held for curriculum developers and selected teachers of Grades 6 – 9. Minister of Science and Technology, Hon. Batty Weerakoon, was the Chief Guest at the opening ceremony. Presentations on Technology Education, Integrated Curriculum, Information Technology, Innovation and Technical Change, Technology and Social Change were made at the seminar.

- Theme : **Issues and Challenges in Aquaculture**
- Date : August 16,2000
- Venue : National Aquatic Resources Research and Development Agency (NARA)

This workshop was jointly organized by the NSF Working Committee on Biological Sciences, National Aquatic Resources Research and Development Agency (NARA) and Sri Lanka Association for Fisheries and Aquatic Resources (SLAFAR). The aim was to help the industrialists and other interested parties to discuss the constraints faced by them in the aquaculture sector of Sri Lanka. It provided a forum to address the issues and challenges faced by the aquaculture sector in this country. The audience (approximately 150) consisted of industrialists, scientists, researchers and representatives from the Ministries of Science and Technology, Fisheries and Aquatic Resources. At the conclusion of the workshop, recommendations were made to overcome the problems highlighted by the participants.

- Theme : **Food Security and Small Tank Systems in Sri Lanka**
- Date : September 9, 2000
- Venue : Postgraduate Institute of Agriculture (PGIA), University of Peradeniya

The objective of this seminar, organized by the NSF Working Committee on Agricultural Science and Forestry and the PGIA, was to gather already available information on small tank systems in Sri Lanka and to assess their impact on the food security of the country. The Chief Guest, Hon. Batty Weerakoon, Minister of Science and Technology emphasized the importance of the issue and referred to interesting mythological views in the early Asian State. At the technical sessions, several presentations were made on irrigation efficiency of small tank systems and their production thresholds.

- Theme : **National Workshop on Scientific Writing**
- Date : September 15 – 17, 2000
- Venue : University of Peradeniya

More than 100 post graduate students, enrolled for M. Sc. M. Phil, and Ph. D. degrees in physical, biological and other sciences in Sri Lankan universities participated in this workshop, organized by the NSF and Postgraduate Institute of Science. The topics covered were: Structure and layout of a thesis/scientific paper, how to write a thesis, ethics in scientific writing, problems in thesis writing and computer aided literature survey and data analysis. Group discussions and practical sessions gave the opportunity for participants to enhance their knowledge and seek clarifications. A large number of resource persons were drawn from universities to conduct lectures and lead discussion groups.

- Theme : **Projects for Learning**
- Date : September 23, 2000
- Venue : Rahula College, Matara

The NSF Working Committee on Science Education and Popularization organized this seminar with the objective of creating an awareness on important aspects of students' project work introduced under the new educational reforms. The target group was Advanced level science teachers of Matara district. Minister of Science and Technology, Hon. Batty Weerakoon inaugurated the programme. Approximately 75 teachers representing 24 schools of the district attended the seminar. Presentations were made on basic features of students' projects, ways of presenting a project, collection of information for projects, usefulness of projects for future etc. Award winning posters prepared by students for the SLAAS school forum in 1999 were on display at the seminar.

- Theme : **Science for Everyday Life**
- Date : September 26, 2000
- Venue : Kaikawala Maha Vidyalaya, Kaikawala

The NSF Working Committee on Science Education and Popularization conducted this workshop for Advanced level science students in Rattota and Matale areas. The main purpose was to create an awareness on problems of local scientific interest among the youth of suburban and village areas. The workshop was attended by 200 G.C.E. (A/L) students and 30 teachers. Resource persons discussed scientific aspects such as ground water pollution, pesticide poisoning, post harvest technology and landslides.

- Theme : **NSF/APSSAM Satellite Training Programme on Health Social Sciences**
- Date : September 30 – October 1, 2000
- Venue : NSF

This training programme was organized by the NSF Working Committee on Social Sciences as a sequel to the 5th Asia Pacific Social Science & Medicine Conference, held in Kandy in early 2000. The programme was designed for health professionals and young social scientists and the intention was to briefly expose them to this important aspect of health-care, which is gaining recognition among the health community throughout the world. Prof. Fatima Castello of the University of Philippines commenced the programme with an introduction to medical sociology. Many presentations were made on themes such as medical geography, medical anthropology, health economics etc.

- Theme : **Physics and Mathematics for National Development**
- Date : September 29, 2000
- Venue : NSF

The main objective of this workshop was to introduce the ongoing research work in the areas of Physical Science and Mathematics to a selected group of industrialists. Seven experts delivered presentations to an audience of approximately fifty persons. A booklet containing a summary of the ongoing research activities by the Physics and Mathematics departments of universities was distributed among the participants.

- Theme : **Biosphere Reserves**
- Date : November 4, 2000
- Venue : NSF

The objectives of the workshop organized by the National Committee on Man and the Biosphere (MAB) were to: review current conditions and status of the MAB reserves, lend Committee's support to identify areas to be included in Sri Lanka's protected areas network, nominate one or two more forests for inclusion in the global network and make recommendations on developing a network fully representative of the ecosystem diversity of Sri Lanka. Participants were drawn from the universities, related institutions and NGOs and the press. Subject areas discussed were floristic and faunal diversity, coastal and marine habitats, protected areas and current trends regarding their management, biosphere reserves and the implementation of the Seville strategy. The highlights emerged from the workshop were transmitted to UNESCO - Paris. Two MAB reserves – Knuckles and KDN complex (Kanneliya, Dediya-gala and Nakiyadeniya) were proposed to the UNESCO Secretariat to be nominated for inclusion in the Global Network of Biosphere Reserves. Five biosphere reserves were proposed for funding for maintenance by the UNESCO.

- Theme : **Intellectual Property Rights**
- Date : November 22, 2000
- Venue : Hotel Topaz, Kandy

A one day awareness workshop on Intellectual Property Rights for young scientists and researchers was organized by the NSF. Fifty participants from research institutes and Universities attended the workshop. Dr. R. Saha, from the patent facilitating cell, Department of Science and Technology, India attended as the resource person. In addition to five presentations on different aspects of IPR, a demonstration on patent searches was also held.

- Theme : **Intellectual Property Rights and Commercialization of Research**
- Date : November 24, 2000
- Venue : BMICH

More than 130 participants from universities, research institutions, industry and legal profession attended this national seminar which was jointly organized by the National Science Foundation (NSF) and the Postgraduate Institute of Science (PGIS), University of Peradeniya. It was co-sponsored by the ADB Project on S&T Manpower Development of the Ministry of Science and Technology.

The main objective of the seminar was to provide a forum for Sri Lankan scientists and industrialists to meet and discuss opportunities and constraints in the Research & Development sector with emphasis on Intellectual Property Rights (IPR) and commercialization of research findings.

Prof. N.R. Arthenayake, Secretary, Ministry of Science and Technology was the Chief Guest. Dr. R. Saha from the Patent Facilitating Centre, Department of Science and Technology, India was the guest speaker. Dr. Saha illustrated different types of Intellectual Property Protections available under the present IPR system and stressed the advantage of obtaining protection under all possible types. In this regard the importance of proper record keeping practices for the benefit of the research scientists was highlighted.

This seminar was held in two sessions and the first session focused on the existing status of the IPR systems, enforcement of IP laws, relevance of IPR issues to the industry in Sri Lanka and commercialization of patented products in the local and international markets.

The second session, on commercialization, provided a forum to discuss the current potential of R & D institutions, opportunities and constraints in the changing socio-economic environment. The need for continuous dialogue between industry and R & D institutions while giving adequate publicity to the current research programmes in the R & D institutions was highlighted.

- Theme : **Deforestation, Land Degradation and Ill Effects on Medicinal Plants**
 Date : December 5, 2000
 Venue : NSF

This press conference was organized by the Working Committee on Traditional Medicine to address various issues related to the above topic. The Conference was chaired by Prof. Kapila Dahanayake. Dr. Anoja Wickramasinghe, Senior Lecturer, University of Peradeniya, Dr. V. Hettigoda, Chairman, Siddhalepa Industries Ltd. and Mr. H.M. Bandaratileke, Conservator of Forests, served as the other members of the panel. Media representatives from Vidusara, Dinamina, Silumina, Daily News and Mihira Newspapers participated.

* *Training Workshops for Young Social Scientists*

The NSF Working Committee on Social Sciences continued to conduct the Training Workshops initiated in 1999 in collaboration with the section "F" of the Sri Lankan Association for the Advancement of Science. The objective was to provide young social scientists with a good background in the basics of social science research. Three workshops were held as follows:

(1) *Workshop No. 4*

Date	-	24 – 25 March
Venue	-	NSF Auditorium
No. of Resources Persons	-	05
No. of participants	-	29

(2) *Workshop No 5*

Date	-	04 – 05 August
Venue	-	SLAAS Auditorium
No. of Resources Persons	-	05
No. of participants	-	26

(3) *Workshop No 6*

Date	-	17 – 18 November
Venue	-	NSF Auditorium
No. of Resources Persons	-	05
No. of participants	-	29

In order to meet the request from participants of the above series of workshops, the Committee initiated work on an advanced training programme for Social Sciences Research. The planning and modelling of the programme for the workshop was in progress during the year, and is now ready to be implemented in the year 2001.

* ***Sponsorship of External Seminars and workshops***

In keeping with its mandate to foster interchange of scientific information, the NSF provides limited financial assistance towards meeting the cost of seminars and workshops on important topics. During the year, 17 such events were supported by the NSF where total funds provided amounted to Rs. 514,477.

Significant Research Findings

- **Improvement of integrated pest management in rice based on understanding biology and population ecology of paddy bug *Leptocorisa oratorius***

Paddy bug, *Leptocorisa oratorius*, the predominant grains-sucking pest of rice, has been the focus for crop protection in rice in Sri Lanka due to the economic importance of its damage. It has been estimated that nearly 3-5% of the rice grains harvested in the country are lost due to paddy bug injury. This is in addition to about Rs. 80 million spent for insecticides in the paddy bug control.

This project attempted to understand the biology and population ecology of paddy bug and thereby improve the paddy bug management methods. Based on the findings the grantees have suggested useful recommendations for paddy bug control, which are of importance to the paddy cultivation in Sri Lanka.

Also the study has confirmed the identity of the paddy bug species found in Sri Lanka as *Leptocorisa oratorius* which was earlier reported as *L.acuta*. In contrast to the earlier reports that the paddy bug feeds on some weeds as alternate hosts, this study has found that the rice is the only host plant that could sustain populations of paddy bug though the insect could be found on some weeds.

(Dr. L. Nugaliadde & Prof. J. Edirisnghe - RG/95/AG/01)

- **Modified atmospheric storage and its effect on biochemical changes of banana, avocado and mango**

'Kolikuttu' banana and 'Karuthacolomban' mango receive higher prices than those of other cultivars due to their good and pleasing taste. Among avocados, 'Pollock' avocado is a popular cultivar grown in Sri Lanka. But the post harvest losses of these fruits are reported to be 40% or more, and the perishable nature of these fruits has limited their export market.

As a solution to this problem, the above study attempted to develop a modified atmosphere packaging system that could reduce the post harvest losses and extend their storage life.

The results indicate that the modified atmosphere created inside the low density polyethylene (LDPE) bags was effective in extending the storage life of banana, mango and avocado.

Packaging of 'Kolikuttu' banana as individual hands in LDPE bags with KMnO_4 impregnated bricks could extend the storage life upto 30 days at 13°C and upto 20 days at $25 \pm 2^\circ\text{C}$. 'Karuthacolomban' mango and 'Pollock' avocado could be stored in LDPE bags with ethylene and CO_2 scavengers for 21 days at 13°C and 29 days at 12°C .

(Dr. D.C.K. Ileperuma, Dr. B.C.N. Peiris & Dr. D.B.T. Wijeratne - RG/96/AG/02)

- **Identifying optimum agro-well dimensions for sustainable irrigation in Anuradhapura district.**

Water storage is a major problem for agricultural activities in the intermediate and dry zones. In most years, precipitation is insufficient to meet the crop water requirements from February to August. The farmers in these zones depend on seasonal rainfall and storage in thousands of small and medium tanks. Since these are not maintained properly, the water they store is hardly sufficient to meet the needs of rural poor. Agrowells or large diameter wells are ideally suited for hard rock aquifers in the dry zone because they act as a short term reservoir as well as a ground water abstraction point. However, the development of agrowells over the past years has taken place in a haphazard way without general assessment of the hydrological properties of the aquifer. These agro-wells therefore, threaten the limited ground water resources.

To overcome these problems, the above study developed a set of nomographs to identify optimum well dimensions based on the aquifer properties and recharge characteristics. The results from this study show that for existing agrowells, depending on the well dimension, the sustainable volume of water abstraction could be identified. For new agrowells to be constructed the optimum well dimension, depth and spacing could be identified. Accordingly, the over exploitation of the limited ground water resources could be minimized.

(Dr. Shanthi de Silva - RG/97/AG/01)

- **Effect of azadirachtin on specific tissues of cockroaches, *Periplaneta americana***

Azadirachtin is a potent insecticidal compound present in neem seeds (*Azadirachta indica*). This was originally identified as the major component responsible for the antifeedant activity of the plant. Since then, the compound has been shown to have a range of biological activities on metamorphosis and development of insects. The neem extracts containing azadirachtin are of particular interest at present due to the fact that they have low mammalian toxicity and low environmental problems in contrast to the synthetic pesticides.

The objective of this study was to understand a few physiological activities related to azadirachtin towards one common house-hold pest in Sri Lanka, namely *Periplaneta americana*.

The study revealed that the effect of azadirachtin on the body weight of the cockroach was dose dependant and the cockroaches treated with azadirachtin showed a continuous weight reduction. Studies on activity of midgut enzymes revealed that more than 50% of the activity was reduced by azadirachtin and similar results were obtained from the ligatured cockroaches. Studies on neem volatiles against cockroaches demonstrated the repellent properties of neem volatile. GC – EAG results (Gas Chromatography – Electro Antenna Graphic Analysis) indicate that more than five compounds including the major compound, azadirachtin, are physiologically active against cockroaches.

(Dr. Priyani Paranagama – RG/97/C/04)

- **Solar energy in tea drying process**

This project under Sida programme on "Renewable energy and energy efficiency" was started in 1995. The idea of the project is to save energy in heating the air which is used for tea drying. In this pilot project air is heated before sending to the heat exchanger. The project was able to show that the quantity of the energy used for drying of tea may be reduced by 33% using solar energy as a pre-heater. Solar panels sized 6' x 2.3' were manufactured using zinc, aluminium

and normal glass. They were mounted on a specially designed roof and connected to the heat exchanger. For better solar energy collecting purposes the zinc aluminium sheet was painted black. It is planned to introduce this preheating system to the tea industry after a techno-economic study.

(Dr. Ziad Mohammed - SAREC/EP/01)

- **Development of DNA markers for the Sri Lankan population for human identification**

The principal aim of this research project was to identify DNA sequences that can be used as genetic markers for human identification.

The preliminary investigations reveal that the multilocus DNA probe 33.15 can be successfully used for DNA typing of the Sri Lankan population. A Sri Lankan population database has been established for the CTT loci. This can be used in forensic investigations for the exclusion of innocent suspects and also in paternity analysis. Grantees of this project had been actively involved in DNA investigations in cases such as Hokandara murder case (1999), Town Hall and Flower Road bomb blasts and also in child abuse/rape cases.

An expansion of this study to a larger number of samples is necessary to determine discrimination power of the probe (33.15) with respect to the human population of Sri Lanka.

(Dr. Maya Gunasekera, Dr. Nalin Goonasekera- RG/96/M/12)

- **The short term and long-term effects of daily consumption of coconut fat, soyabean fat and sesame oil on plasma lipids and lipoproteins of healthy adults, patients with ischemic heart disease and patients with hyper-lipidemia**

The overall aim of this research was to investigate how the coconut fat content in the diet could be adjusted in relation to Poly Unsaturated Fat (PUF) and Mono Unsaturated Fat (MUF) for obtaining an optimal lipid profile in health and in disease (ischemic heart disease).

It was found out that reducing the total fat in the diet with PUF (Soyabean fat) and MUF (gingelly oil) while maintaining the PUF/SF ratio close to "1" is associated with a lipoprotein profile that would be expected to reduce cardiovascular risk. Thus, patients at high cardiovascular risk such as those suffering from ischaemic heart disease and hyperlipidaemia should be made aware that they would benefit from such dietary modifications.

(Prof. Shanthi Mendis, Prof. R.O. Thatil, Prof. U. Samarajeewa - RG/96/M/14)

- **Development of new methods for gem exploration**

Gems bring a large proportion of the annual total foreign exchange of Sri Lanka. Although suitable conditions for gem mineralization is found in most parts of the island, gemming is mainly confined to Ratnapura, Elahera and Okkampitiya gem fields. Locating gem deposits and identification of gem bearing areas are done using traditional and 'heresay' methods. Developing scientific methods to identify gem bearing areas and gem deposits is a nationally important issue. Rb/Sr ratio of stream sediment has been identified as a powerful tool in identifying gem bearing areas. However as the behaviour of Rb/Sr ratio has not been fully explained, it was difficult to practically apply it and further refine it. Therefore this study aimed at studying the behaviour of Rb, Sr and other associated major and trace elements in stream sediments, gem bearing gravels

and gem source rocks and to further refine the ratio using other similar elements. This method is scientifically useful, as the method may be applicable elsewhere. It is also helpful for the national development of the gemstone industry.

(Prof. M. S. Rupasinghe – RG/96/NR/01)

- **Microstructured semi-conductor photocatalysts for destruction of organic contaminants and removal of heavy metals in water**

Microstructural photocatalysts based on high band gap semiconductors immobilized on substrates were characterized and tested for photocatalytic activity towards mineralization of organic contaminants in water and extraction of heavy metals. It was found that fractionally porous TiO₂ deposited on glass is highly active, and a practically promising photochemical reactor was constructed and found to be efficient in decontaminating organic contaminants in water. A method was devised for extraction of heavy metals from the aqueous medium circumventing the necessity of using a water soluble sacrificial agent. The knowledge gained from the project was also used for fabrication of an efficient dye-sensitised solar cell.

(Prof. K. Tennakone – RG/95/P/04)

- **A study to examine the contribution of the agriculture curriculum implemented for years 10-11 in Sri Lankan schools from the year 1996 towards preparing students to follow the curricula in institutions producing agricultural professionals**

Considering 'Agriculture' as an important subject in the educational curriculum of a country with a potential for the development of agriculture, the project has examined the revised G.C.E. (O/L) syllabus introduced to Sri Lankan Schools in 1996. The objective of the reforms had been to give a practical and professional orientation to the subject. The study was conducted to examine the extent to which the syllabus helped to prepare students to undergo the professional Diploma course offered by the Schools of Agriculture and the examination conducted by the Department of Agriculture.

It has been revealed that the syllabus examined provides a knowledge base that adequately prepares a student to follow a professional course in Agriculture. However, it was also found that practical activities of the syllabus are not being appropriately carried out; that the teachers face various difficulties in carrying out the teaching programme; that the evaluation of the practical aspects are not satisfactory from the perspective of the students; and that it does not generate a positive attitude towards agriculture as a subject despite the fact that in comparison to the earlier syllabus the newly introduced syllabus was more successful.

It has been recommended that the selection of the subject of Agriculture should be based solely on the student's liking for the subject. Students who wished to follow more than one technical subject should be allowed to offer more than one technical subject. Time allocated in the school time-table for Agriculture be given in double periods considering the practical nature of the subject.

The need to establish a training college to train teachers of agriculture has also been highlighted. A change in practical evaluation has been suggested. Since it is difficult to provide the required resources to all schools it has been proposed that schools with assets be turned into Resource Centers.

(Mrs. P. Samaraweera – RG/98/SS/04)

- **Recreational potential of Belihuloya – Pambahinna area: A study of the rational allocation of geographical resources**

It has been observed that tourism and recreation have become a major factor of regional development. Most regions remain under developed due to the non-use of resources rationally and at optimum level. For this, it is important to understand the potential of the resources available before involving them in development. In this context a study has been conducted to assess the recreation potential of the Belihuloya-Pambahinna area for purposes of promotion and development.

Belihuloya Pambahinna area has been found to have the potential to be an important transit zone, for domestic and foreign tourists who traverse the hill country and south coast areas. This area could be a stop-over destination for short holidays and also could be used as a hub from which to travel to recreational areas in the vicinity.

For such a development to take place in the area, the attention of the relevant authorities should be focused on the improvement of basic infrastructure and on the dissemination of tourism related information in order to attract investment in this resource.

(Mr. K. V. D. Edirisooriya - RG/92/SS/13)

Publications

- ***Journal of the National Science Foundation***

Volume 27, No. 4 (December, 1999)

Volume 28, No 1 (March, 2000)

- ***Vidya – Newsletter***

Volume 2, No. 1 - January, 2000

Volume 2, No. 2 - April, 2000

Volume 2, No. 3 - July, 2000

Volume 2, No. 4 - October, 2000

- ***Vidurava – Science News Bulletin***

Volume 19(1) – Indigenous Knowledge (English)

Volume 20(1) - Projects for Learning (Sinhala, Tamil, English)

Copies of these issues were sent to 325 government & private schools conducting Advanced Level Science classes.

- ***Science Education Series***

The manuscript on "Induced abortions in Sri Lanka" is being written by Dr. P. Hewage of Department of Geography, University of Ruhuna.

- ***Special Publications***

- **Natural Resources of Sri Lanka 2000**

The 'Natural Resources of Sri Lanka' published by NARESA in 1991 was revised incorporating latest information. The document was prepared for printing.

- ***Publications by the Staff Members***

- "Human Resources Development towards Knowledge Based Economy"
R.M.W. Amaradasa, M. Watson
Country report presented at the STEPAN Seoul workshop. June 11 –15, 2000, Seoul, South Korea.

- "Analysis of Patents in Sri Lanka"
R.M.W. Amaradasa, M.A.T. de Silva, R.P. Pathirage
Abstract accepted for presentation at the "Seminar on R & D Management Conference 2001"
Wellington, New Zealand, February 7- 9, 2001.
- "Science & Technology in Industry"
M.A.T. de Silva, R.M.W. Amaradasa
Presentation made at the "Biennial Conference on Science & Technology" August 25-27,
2000, Kalutara, Sri Lanka.
- "Financial Resources for Science & Technology in Sri Lanka"
M. Watson, R.M.W. Amaradasa
Presentation made at the "Biennial Conference on Science & Technology", August 25 - 27,
2000, Kalutara, Sri Lanka.
- "The Evaluation and Structure of Science & Technology in Sri Lanka"
R.M.W. Amaradasa, M.A.T. de Silva
Accepted for publication in "Journal on Science, Technology & Society" New Delhi, India.

- ***Proceedings of Seminars***

- The proceedings of the 3rd Asian Buffalo Congress held in Kandy 27 – 29, March 2000.
- *Buffalo Information Dissemination Project*
 - ★ "Hand book for Veterinary Surgeons".
 - ★ Tamil version of the following booklets with regard to management of buffaloes were printed to distribute among farmers and Veterinary Surgeons.
 - i. Health and diseases of buffaloes and cattle
 - ii. Breeding of buffaloes and cattle
 - iii. Reproduction in buffaloes and cattle
 - iv. Body condition scoring system for assessing the nutritional status of buffaloes
 - v. Fibrous feeds and their utilization
 - vi. Urea-molasses, mineral multi-nutrient feed supplement
 - vii. Management of buffaloes and dairy cattle
 - viii. Feed formulation for cattle and buffaloes
 - ix. Crop-livestock integration for maximizing small holder farm income
 - x. Use of tree fodder in ruminant feeding

- ***Publications arising from Research Grants***

- Sri Lankan Medicinal and Aromatic Plant Monographs
Compiled by Ms. Purnima Jayasinghe
Five volumes of this series were published:

Volume 1- *Centella asiatica* (Gotukola)

Volume 2- *Murraya koenigii* (Karapincha)

Volume 3- *Momordica charantia* (Karawila)

Volume 4- *Withania somnifera* (Ashwaganda)

Volume 5- *Piper longum*, (Tippili)

- Sri Lankan Medicinal Plant Monographs and Analysis
Compiled by Dr. Lakshmi Arambewela and Ruvina Silva
Six volumes of this series were published:

Volume 1- *Kaempferia galanga*,

Volume 2- *Solanum xanthocarpum*

Volume 3- *Piper longum*

Volume 4- *Withania somnifera*

Volume 5- *Cassia angustifolia*

Volume 6- *Plumbago indica*

International Scientific Activities

* *Sida SAREC Programme*

Under the Sri Lanka – Sweden bilateral research co-operation Sida/SAREC has approved SEK 4,900,000/- for the following projects to be funded during the period 2000 – 2002.

- *International Travel Fund*

Sri Lankan Scientists are supported for international travel to attend scientific meetings/workshops/short term training programmes. Applications are considered on the basis of three geographical regions, i.e. SAARC, Asia – Australia and Africa – America, Europe regions. During the year 2000, 173 applications were received and 99 travel grants were awarded.

- *Sida/NSF Research Grants*

A total number of 13 projects were operating during the year 2000 in the fields of Social Sciences, Energy and Biotechnology. Details are given in annexes.

- *Marine Science Programme*

During the year 2000, the Marine Science Programme has focused on Human Resources Development at NARA through training at Ph.D level. The proposed PhD training programmes are:

- (i) Coastal Aquaculture Management
- (ii) Ecotoxicology and Bioindicators
- (iii) Coral Reef ecology management
- (iv) Oceanography
- (v) GIS for coastal resources management

- *R & D Policy/S&T indicators*

Under this programme, exchange of Scientific Officers between NSF and National Research Council (NFR) in Sweden, S & T Surveys, and training of Scientific Officers at the NSF on R & D policy /S & T indicators have been proposed.

Consequently, Dr. Brita Beije of Sweden visited Sri Lanka for one month. She studied the R & D programme in Biological Sciences at the University of Peradeniya, University of Colombo and the Tea Research Institute. In exchange Mrs. Rohini Wijeratne, the Scientific Officer at the NSF, who co-ordinates the Working Committee on Biological Sciences visited the Natural Sciences Research Council in Sweden to study the R & D activities in that country.

- *Urgent Spare-parts Fund*

Ten urgent spare-parts for research equipment were provided during the year 2000. In addition, one training programme on "Electronic Microscope" for Technicians/Technical Officers organized by the Atomic Energy Authority was partially funded under this programme.

✱ ***Commonwealth Science Council***

• *Travel Grants Scheme*

The purpose of this travel grants scheme is to help scientists of member countries of the CSC to attend international conferences, major meetings and short technical in – service training courses. Grants cover the actual costs of the return airfare and registration fees upto a total of £ 1000.

During the year 2000, twenty two applications were received and processed. Eight travel grants were awarded by the CSC.

• *Fellowship Scheme*

This fellowship scheme provides opportunities for scientists and engineers, from member Commonwealth developing countries, to enhance their professional skills and experience through short term attachments in other Commonwealth countries.

Two applications were received and processed during the year.

• *Workshops*

Information on the following workshops sponsored by the CSC were circulated among relevant institutions and nominations were forwarded to the CSC.

- (a) Hands on Training on "Monitoring Sewage Discharge Plumes and Treatments of Sewage Waste"
April 3 – 8, 2000, Australia
- (b) Training Workshop on "Monitoring and Analysis of Toxic Chemicals and Biological Toxins in Food and Water".
May 15-20, 2000, India
- (c) Regional Training Workshop on "Monitoring Toxic Constituents Generated from Peat Swamp Forest Fires"
June 26 – 29, 2000, Brunei
- (d) Seminar on "Renewable Energy"
November 5-11, 2000, UK

• *National Centres of Excellence*

The CSC requested the NSF to nominate and provide details of institutions that can be identified as Centres of Excellence in the fields of: Access to genetic resources: Bioprospecting; DNA – fingerprinting; Intellectual Property Rights and Benefits sharing. Since there were no institutions that can be identified as such, the NSF nominated 19 individuals who have expertise in the relevant areas. They could serve as the nuclei for development and strengthening of institutional and human resources in their respective institutions.

✳ ***International Foundation for Science***

The NSF is a member organisation of the International Foundation for Science, which is an international, non-governmental organisation based in Sweden. The IFS supports young scientists in developing countries in their research efforts in the agricultural and biological sciences as well as in management, conservation and sustainable use of natural resources.

On a request made by the IFS to nominate a candidate to be appointed as a Board Member of the IFS for the Asia/Pacific region, the NSF nominated Prof. Kapila Dahanayake, Chairman/NSF.

✳ ***International Centre for Genetic Engineering & Biotechnology (ICGEB)***

ICGEB is an international intergovernmental organisation conceived as a Centre of Excellence for research & training in genetic engineering & biotechnology with special attention to the needs of the developing world. Sri Lanka is a full member of this organisation. The NSF as the national scientific focal point, circulated information on meetings and courses held during the year 2000, called applications for Pre-doctoral fellowships and collaborative research programmes/projects, proposals to host courses, workshops, research meetings in 2001. The Working Committee on Biotechnology interviewed candidates for pre-doctoral fellowships. Six nominations were forwarded to ICGEB for further consideration.

Prof. S. Widanapathirana, Governor for Sri Lanka to ICGEB, attended the seventh session of the Board of Governors of the ICGEB held in New Delhi from 13 – 15 November, 2000.

✳ ***Asian Association of Social Science Research Council (AASSREC)***

The NSF continued to function as the national focal point for AASSREC during the year and co-ordinated its activities with the Sri Lankan Social Scientists.

A member of the Working Committee on Social Sciences was nominated for the 14th Biennial conference of the AASSREC due to take place in Vietnam in October, 2001. Arrangements to hold a national seminar on "Globalization and its Impact: Economic, Social and Cultural Dimension" were being made.

✳ ***Visits of Foreign Delegates***

January 2000	-	Dr. Brita Beije Co-ordinator /Biological Sciences Committee Natural Sciences Research Council (NFR) – Sweden
January 2000	-	Mr. V.V. Krishna Jawaharlal Nehru University, New Delhi, India
February 2000	-	Mr. Gerharb Kapitan Italy
March 2000	-	Mr. Anders Ingvarsson Journalist/Reporter of Swedish science magazine "Technology & Science" Sweden

March 2000	-	Ms. Helge Zubin Sweden
May 2000	-	Dr. Rama Rao Chairman and Director/AVRA Laboratories Pvt. Ltd, India
August 2000	-	Dr Per – Einar Troften SAREC, Department of Research Co-operation, Sweden
September 2000	-	Prof. Malin Akerblom Director, International Science Programme Uppsala University, Sweden
November 2000	-	Dr. R. Saha Head, Patent Facility Centre Department of Science & Technology, India
December 2000	-	Dr. Willie Senanayake Assistant Director, Department of Industrial Development Canberra, Australia
December 2000	-	Mr. Lee Yuke Chin General Manager/SIRIM, and Consultant, WIPO Malaysia
December 2000	-	Dr. Shakti Upadhyay Chief Scientist, National Institute of Immunology India

Other Activities

* **Science and Technology Indicators Unit**

- Surveys on Technicians / Technical Officers, Scientific Instruments, Research Scientists & Engineers were conducted and databases were created. Two directories were published based on this information.
 - i. Directory on Scientific Instruments in Sri Lanka
 - ii. Directory on Technical Personnel in Sri Lanka
- Survey on patents granted in Sri Lanka from 1980 – 1998 was completed. The findings of the patent analysis were submitted to the R & D Management Conference to be held in February 2001 in New Zealand.

* **Asian Development Bank (ADB) Project**

- *Manpower Information System*

The NSF was supported/funded by the ADB for the development of a Manpower Information System (MIS) on science and technology.

New staff was recruited and funds were received from the ADB for training and office furniture. During the year, a database on S & T personnel in the industrial sector, and a test web-site on S & T personnel in Sri Lanka have been created. A tracer study on graduates who graduated in 1998 and 1999 has been commenced.

- *Centre for Technology Watch*

The NSF initiated arrangements to establish a Centre for Technology Watch (TWC) under the ADB project on S & T Personnel Development (STPDP). The main objective of this proposal is to assist the industries in Sri Lanka by providing information on up-to-date technologies available world wide, to enable them to compete in the global / regional markets. During the latter part of the year 2000, arrangements were being made to recruit the required personnel to work at the TWC. This project will be funded by ADB until June 2003.

* **COSTED study on 'Mobility of S & T Professionals**

The government of India, together with five other Asian countries commenced a pilot study on "Mobility of S & T Professionals". This emerged as a result of a project proposal submitted by India to STEPAN. The project is expected to come up with policy recommendations for developing measures to retain S & T Professionals in their own countries in Asia. Mechanisms for compensation have to be developed in lieu of benefits provided by developed countries that utilise science and technological talents of qualified scientists in Asian countries. This project is partially funded by UNESCO.

✳ **Programme on 'History of Science in Sri Lanka'**

- This newly started programme (HSSL) operates under the guidance of a Working Group appointed by the NSF. Activities in progress are:
 - (a) Preparation of the Bibliography on HSSL
 - (b) Translation of books into English
 - (c) Publication of M. Phil theses as a book in English
- The NSF has requested the membership of the "International Union of the History and Philosophy of Science". Sri Lanka has been offered the status of "Observer" for one year, from July 2000.

✳ **Science & Technology Article Translation Competition**

The Working Committee on Science Education & Popularisation launched an island wide competition for school children in Grades 10 – 13 for translating articles on Science and Technology from English to Sinhala or Tamil. Students were requested to select articles from any newspaper published locally or from any periodical available locally. In response, more than 100 applications were received from Sinhala & Tamil students and 42 were selected from both categories for the final round.

✳ **Funds for School Projects**

The Working Committee on Science Education & Popularisation launched a new programme to fund project work carried out by students. The selection criteria were:

- group projects
- collaborative projects between a school in an urban setting with adequate resources, and a school in a rural area with inadequate resources; and
- carried out in an area where the school with minimal resources is situated

The Committee identified 20 schools with adequate resources to carry out the projects and requested them to submit proposals. Only seven schools responded and after careful consideration, four proposals were recommended for funding. They are given below.

- K/Trinity College and K/ Nahiniwala Junior School
"Study the influence of water and nutrition and inherited diseases on the health of people in the village of Nahiniwala".
Rs. 7,500/-
- R/Sumana BMV and R/Gatengama Ratne MV
"Preparation of compost manure by 'barrel method' in the school garden; introduction of potted planting as an intensive cultivation system"
Rs 7,500/-
- C/D.S. Senanayake MV and Don Pedris MV, Horana
"Problems arising in stage lighting technology and simple solutions which could be applied".
Rs. 7,500/-
- G/Sangamitta BMV and Sri Sangarathana Junior School, Ahangama
"Study the reasons for absenteeism and find ways to increase the attendance of students in Sangarathana school".
Rs. 7,500/-

✳ ***Participation in Exhibitions***

- (A) N – CEF Science Exhibition and Mahapola Trade Fair
 March 25, 2000– April 01, 2000
 N-CEF Buddhist School, Mulleriyawa
 Models, posters of NSF research projects and publications were displayed
- (B) Sri Lanka Association for the Advancement of Science (SLAAS) (56th Annual Sessions)
 November 27, 2000 – December 01, 2000
 Models, posters of NSF research projects were displayed and publications (amounting to Rs. 20,000) were sold at the exhibition

✳ ***Documentary Video Film on the Horton Plains***

The NSF under its Working Committee on Zoological Survey of Sri Lanka has produced a video film on Horton Plains ecosystem named "The Good, the Bad and the Ugly". This was directed and produced by Mr. Anslem de Silva, University of Peradeniya and it highlights the occurrence of many endemic fauna & flora in the ecosystem and its importance as a catchment area. The film won an award at the 1999 Sony/ICD Video Contest in Tokyo. 30 V4s cassettes of the film were produced and are available for sale at the NSF for Rs 1500 per unit.

✳ ***Rodney Jonklaas Seashell Collection***

The Rodney Jonklaas seashell collection, which is considered as a national treasure was purchased by the NSF for Rs. 650,000. This collection which contains 2537 specimens of shells was inventorised and fully indexed. The whole collection with display cupboards and a copy of catalogue were transferred to the National Museum, to be kept in its Zoological Division for the purpose of exhibition as well as use for scientific purposes. It is understood that this collection will form the nucleus around which the zoological collection of the National Museum would be established.

✳ ***International Mathematical Olympiad***

The 41st International Mathematical Olympiad (IMO – 2000) was held in Taejan, South Korea in July 2000, and the organisers requested the NSF to send a team from Sri Lanka. The NSF Working Committee on Physical & Mathematical Sciences called applications through a Newspaper advertisement, from students who have obtained 'A' s in Pure & Applied Mathematics at the G.C.E. (A/L) Examination – 1999. From among the 40 applicants who sat the qualifying test, three students were selected to represent Sri Lanka at this competition

Mr. U.B. Umasankaran, Hindu College, Colombo
 Ms. T. Tharmini, Hindu College, Chavakachcheri
 Mr. K.AT.A. Jayasekera, Royal College, Colombo

Team Leader - Dr. M.A.U. Mampitiya, Univ. of Kelaniya
 Deputy Team Leader – Dr Maneka Liyanage, Univ. of Sri Jayewardenepura

The NSF provided necessary funds for airfare and incidental expenses and the Korean Organisers met all other expenses.

Mr. U.B. Umasankaran was awarded a certificate of "Honourable Mention".

✳ ***Policy and Guidelines for Recumbent DNA Technology***

The Working Committee on Biotechnology recommended preparing a Laboratory Policy and Guidelines for the safe use of Recumbent DNA Technology in Sri Lanka. The aim of the policy is to encourage the use of safe laboratory practices while promoting research in Biotechnology. As a preliminary step towards this, the current situation in the country with regard to research & development work involved in biotechnology was studied. The laboratories and the scientists conducting work in this field at present were also identified and information was compiled.

✳ ***Communiqués sent to Government Organizations***

- At the sixteenth Meeting of the SAARC Technical Committee on Science & Technology (special session on Biotechnology) it was decided that the member countries should prepare a concept paper. This paper was to be on six areas identified and was to be circulated among the member countries for their inputs. As such, the inputs were forwarded to the Ministry of Science and Technology for onward transmission to the SAARC secretariat.
- Detailed comments on the 3rd draft of the National Guidelines for activities related to Genetically Modified Organisms and Products were sent to the Ministry of Forestry and Environment.

Sri Lanka Scientific & Technical Information Centre (SLSTIC)

SLSTIC established in 1979 continued to be the focal point for dissemination of Science and Technology information in Sri Lanka. During the year 2000 the following resources and services were incorporated to strengthen SLSTIC activities.

□ *Collection development of the NSF library*

During the year 2000, 287 books, 296 journals, 474 newsletters, 42 annual reports, 37 final reports, 48 gazettes, 25 CD ROMs were added to the collections.

Membership (General)	210 Nos.
Institutional Membership	17 Nos.

□ *Database development*

Since 1996 SLSTIC has been actively engaged in database development which was facilitated by Local Area Network. In the year under review, the existing databases were strengthened with the addition of 2177 new records to Sri Lanka Science Index (SLSI), 987 to SLSTICAT (Library Catalogue), 2240 to Index to newspaper articles (NEWSP), 85 to Act & bills database and 63 records to the WEB. In addition to the database on natural resources "NATURAL" was developed with the cooperation and assistance of the SLSTINET libraries which included 1663 records.

□ *Assistance in utilisation of IT*

SLSTIC/NSF contributed as the national distributor of the UNESCO SOFTWARE CDSISIS DOS & Windows versions. As such WINISIS was distributed to 88 users and ISIS DOS version to 47 users, during the year 2000. 41 library personnel were trained on developing databases using WINISIS for which 4 workshops were held. In addition a user forum of ISIS users was held at which 62 library personnel were present. Director Information of NSF and staff members also attended as resource persons at training workshops on ISIS conducted by Sri Lanka Library Association and National Library. SLSTIC also provided in service training for undergraduates. SLSTIC also obtained online access to DELNET from India.

□ *Network Activities*

The local area network was enhanced with the following:

- A new database server running on Linux was added
- Three new Websites were hosted: Sri Lanka Evaluation Association, Sustainable Townships Programme, Atomic Energy Authority
- Online access to four databases developed by SLTIC. In addition Standards database developed by Sri Lanka Standards Institute was also hosted online.
- Online database searching was enhanced by using new web interface WEBISIS.

□ *Library Networks*

SLSTIC contributed to the development of the following networks by participating in their co-operate activities.

- HELLIS: Health Literature and Library Information Services
- AGRINET: Agricultural Information Network

Seminars, Conferences, Meetings, Workshops attended by Staff

Prof. Kapila Dahanayake, Chairman

Foreign

- 19 Feb. - 08 March - Commonwealth Science Council (CSC), 20th Meeting
Trinidad and Tobago.
Met scientists to discuss mutually important matters
USA and UK (CSC)
- 10 – 20 December - International Conference on Knowledge and East West Transitions,
National Institute for Advanced Studies, Indian Institute of Science
Campus, Bangalore, India.
- International Symposium on "Sustainable Futures"
Madurai Kamaraj University, Madurai, India.
Made presentations and chaired technical sessions at both meetings

Local

- 21 March - Address at NSF Press Conference on "Earthquakes"
- 27 March - Presentation at Third Asian Buffalo Congress
Kandy
- 04 May - Lecture on "Potential Disasters"
Workshop on Disaster Management (for Nursing Officers)
Galle
- 12 May - Welcome address
NSF Seminar on "Alternative Materials for the Construction Industry".
Hotel Oberoi, Colombo
- 23 June - Welcome speech and Lecture on "Structure of thesis"
National Workshop on "Scientific Writing"
PGIS, University of Peradeniya
- 30 June - Welcome speech
NSF – PGIS Workshop on Postgraduate Science Education
NSF Auditorium
- 08 July - Workshop on Geology (Lecture on Landslides)
University of Peradeniya
- 21 July - Lecture on "Academic Writing"
Workshop on "Research Methods"
National Library and Documentation Centre (NLDC), Colombo.

- 15 August - Lecture on "Landslides"
Workshop on "Geology for Engineers"
PGIS, Peradeniya
- 21 August - Guest of Honour
Regional Workshop on "Curriculum Development – Diploma in Laboratory
Technology"
Open University of Sri Lanka.
- 09 September - Welcome speech
NSF Seminar on "Food Security and Small Tank Systems"
PGIA, University of Peradeniya
- 26 September - Lecture on "Landslides"
"Science for Everyday Life" - NSF Seminar for A/L students
Kaikawala Maha Vidyalaya, Matale.
- 29 September - Chief Guest
Annual prize giving
Gateway International School, Kandy
- 03 November - Lecture on "Landslides"
Workshop on "Disaster Management"
Divisional Secretariat – Nildandahinna, Walapane
- 23 November - Welcome speech and Chairman of session
NSF Seminar on "Projects for Learning"
Rahula College, Matara.
- 28 November - Presented a paper on "Research Funding and output – NSF Experience"
Theme Seminar of SLAAS 56th Annual Sessions, Peradeniya

Attended Meetings

1. As a Member of Board of Management of the National Library and Documentation Services Board.
2. As a Member of Sri Lanka Council for Agricultural Research Policy (CARP).

Mr. M. Watson, Director

Foreign

- 12 – 14 June - STEPAN Seoul workshop on HRD for a knowledge based economy and
STEPAN Board Meeting
Seoul, Korea

Local

- 15 January, - Special Session of the Legal Task Force on Access to Genetic Resources
27 January Benefit Sharing and Biosafety
06 April Hotel Kings Park, Kandy
- 09 March - Committee Stage Programme for budget 2000
Parliament of Sri Lanka

- | | | |
|-------------|---|---|
| 13 March | - | IPR Committee of Medicinal Plants Project
Ministry of Health & Indigenous Medicine |
| 14 March | - | Project Monitoring & Performance Review, Official Committee Meeting
Ministry of Plan Implementation |
| 05 April | - | Performance Monitoring & Evaluation
Ministry of Plan Implementation |
| 27 April | - | IGBP National Committee
Ministry of Forestry & Environment |
| 13 May | - | PGIS Board Meeting |
| 08 July | - | Postgraduate Institute of Science |
| 18 November | - | Peradeniya |
| 29 May | - | Meeting on Information Technology
Ministry of Science & Technology |
| 01 June | - | Workshop on Agricultural Development & Policy Issues in Sri Lanka
National Science Foundation |
| 21 July | - | ADB Project Technical Advisory Committee Meeting,
Ministry of Science & Technology |
| 24 July | - | Seminar on "GMOS and their products: Do we need them",
Postgraduate Institute of Agriculture, Peradeniya |
| 31 August | - | Agricultural co-ordinating Committee Meeting
Ministry of Agriculture & Lands |
| 28 November | - | SLAAS Seminar on Research Priorities for the Current Decade
University of Peradeniya |
| 14 December | - | National Technology Transfer Training Programme
Sri Lanka Institute of Development Administration |

Other Staff Members

Foreign

- | | | |
|--------------|---|---|
| 18 - 23 Sep. | - | 12th Consultative Meeting & Regional Seminar/Workshop on Information and Communication Technologies (ICT) and Knowledge Management,
Terelj, Mongolia
Mrs. D. Talagala |
| 12 October | - | Workshop on Environmental Security in South Asia
New Delhi, India
Mr. A.W.J. Karunasinghe |

Local

- | | | |
|------------|---|--|
| 24 January | - | Consultative meeting on the formulation of the National Health Research Council Act, Medical Research Institute
Mrs. C. G. Yapa |
|------------|---|--|

- 01 February - Interactive workshop on "Research Performance Evaluation" Hotel Galadari, Colombo.
Mr. R.M.W. Amaradasa, Ms. C.G. Yapa
- 27 April - Seminar on "Protection of new plant varieties" organised by International Union for the protection of new plant varieties, Switzerland & Department of Agriculture, PGRC, Gannoruwa, Peradeniya.
Ms. Seetha Wickremasinghe
- 23 Sep. 2000 - APN/SASCOM Regional Capacity Building Workshop on Global Changes Issues, Mt Lavinia Hotel, Colombo -
Mrs. A Amarasinghe
- 07 Nov. 2000 - Sri Lanka – GEF Country Dialogue Workshop, Mt. Lavinia Hotel, Colombo
Mrs. A. Amarasinghe
- 22 November - Workshop on 'Intellectual Property Rights organised by NSF, Hotel Topaz, Kandy
Ms. S.I. Wickremasinghe, Ms. Rohini Wijeratne,
Miss. Anuradha Welegedara
- 22 November - Workshop on the preparation of Corporate plans, Ministry of Science and Technology
Mrs. A. Amarasinghe, Mrs. D. Talagala, Miss. C. Fernando
- 08 December - National workshop on "Weed Management Strategies for Sri Lanka" organized by CARP & PGRC
Ms. S.I. Wickremasinghe
- 01 December - National Seminar on "Modern Agricultural Biotechnology" organised by ITDG, Ceylon Inter Continental Hotel, Colombo
Dr. Tamara F. Dias
- 18 December - Seminar on 'Awareness on Climatic Change' , Department of Meteorology, Colombo
Ms. S.I. Wickremasinghe, Ms. Rohini Wijeratne.
- 20 December - National Programme to Prioritise Environment Research Needs in Sri Lanka, Ministry of Forestry & Environment
Ms. A. Amarasinghe

- Mr. W. Amaradasa (Director/Scientific Affairs) served in the Technical Committee of Sri Lanka Inventors' Commission.
- Ms. Anusha Amarasinghe (Director/Scientific Affairs) was nominated to serve in the Research Committee at the Department of Wild Life Conservation.
- Mrs. D. Talagala (Director/Information) served as the National Consultant for the UNDP project on developing a national resources centre and database to enhance the capabilities of the Ministry of Women's Affairs.
- Director/Information represented NSF at the following networks:
 - LEARN Management Committee
 - National advisory group of the Information Network in Social Sciences (APINESS).

Staff Development and Training

Foreign

- 17 Feb.-22 March - International Training Programme on "Manpower Planning for Science & Technology Personnel", Institute of Applied Manpower Research , India
Mr. R.M.W. Amaradasa
- May 2000 - Natural Sciences Research Council (NFR), Sweden
Ms. Rohini Wijeratne
- 21 – 25 Aug. - Regional Training Workshop on Website Construction and Management, Atomic Energy Commission, Vietnam
Mrs. Amila Vijayanthi
- 21 Aug. – 1 Sep. - Internet application and analysis design and development, Institute of System Science, Singapore
Mr. Jagath Weerawardena
- 05 Oct. – 29 Nov. - Training Programme on Human Resource Planning & Development at Institute of Applied Manpower Research (IAMR), India
Mr. S.P. Dissanayake
- 17 Nov. - 16 Dec. - Training Programme on S & T Indicators and Measures in S & T Policy, Centre for Research Policy, University of Wollongong, Australia
Dr. Saman Fernando and Mr. Rohan Pathirage

Local

- 02 – 24 Feb. - Interviewing techniques for Senior and Middle level Managers of Public & Private Sector Organizations, Sri Lanka Institute of Development Administration (SLIDA)
Mr. R.M.W. Amaradasa
- 12,13,19,20 June - Workshop on MS Office 97, NIBM
Ms. Nilanthi Liyanage, Mr. G. Munasinghe
- 20 - 21 July - Workshop on Research Methods, National Library & Documentation Centre, Colombo
Miss. Asha Pitadeniya
- 27 - 28 July - Clerical skills development, Institute of Government Accounts & Finance
Mr. D.W. Wickremaratchi, Mr. E.P. Jayasena,
- 05 – 09 September - Interviewing Techniques, SLIDA
Ms. K.C.J.T.K. Fernando
- From September
(20 weeks) - Certificate course in Windows based applications, NIBM
Ms. K.C.J.T.K. Fernando
- 07 – 08 September - Clerical skills development, Institute of Government Accounts & Finance
Mr. R.P.D. Premaratne, Ms. V. Rajapakse, Ms. R. Mapatuna

- 13 – 14 September - Training of Accounts Assistant, Institute of Government Accounts and Finance
Ms Y.J. Pathirana
- 15 – 16 Sep. - Public Enterprises Management Fundamentals, Institute of Government Accounts & Finance
Mr. M.K. Rathnaweera
- 15 - 17 Sep. - National Workshop on Scientific Writing organized by NSF and Postgraduate Institute of Science, University of Peradeniya
Miss. Anuradha Welagedara
- 11, 12, 18,19 September- Short term course on MS-Office 2000, NIBM, Colombo
Mrs. Champika Wijethunge
- 28 – 29 Sep. - Internal Audit Skills Development, Institute of Government Accounts and Finance
Mrs. D.L. Sirimathie, Mr. L.B. Ekanayake

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CBO	-	University of Colombo
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PDN	-	University of Peradeniya
RUH	-	University of Ruhuna
SJP	-	University of Sri Jayawardenepura

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Traditional Medicine

A new Working Committee on traditional Medicine was established on the request of Ministry of Science & Technology with the objective of promoting research in the area of traditional medicine. The Committee held seven meetings during the year 2000. The committee consists of

Prof. Carlo Fonseka (Chairman)
 Prof. B. M. Ratnayake Bandara
 Prof. Tuley de Silva
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 Dr. Lakshmi Seneviratne
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Grants Sponsored by Foreign Agencies

Status Summary - 2000

Foreign Agency/Discipline Status	SIDA Coastal Ecology Research Programme	SIDA Social Sciences	SIDA Biotechnology	Total
Total no of ongoing grants as at 31.12.2000	03	10	12	25
Grants completed	02	01	-	03
Grants withdrawn	-	-	-	-
Grants terminated	-	-	-	-
RS s appointed	01	02	-	03
RS s registered for PG	02	02	-	04
Thesis (PG) received	-	-	-	-
No of applications received during 2000	01	09	01	11
Funds requested for 2000 (Rs)	240,000	636,455	2,446,990	3,323,445
Amount allocated for 2000 (Rs)	240,000	526,455	2,446,990	3,213,445

New Grants Awarded in year 2000

Agricultural Science & Forestry

Grant No	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
RG/2000/AG/01	Dr. K. S. P. Amaratunga Dept. of Agric. Engineering Dr. D. K. N. G. Pushpakumara Dept. of Crop Science Faculty of Agriculture University of Peradeniya Peradeniya	Identification, evaluation and improvement of processing and storage techniques of selected under-utilized fruits. 2 years	385 171. 00
RG/2000/AG/02	Ms. R. M. C. P. Rajapaksa Dept. of Crop Science Faculty of Agriculture University of Peradeniya Peradeniya	Composting of rice straw using inoculants of indigenous soil microorganisms 3 years	783 050. 00

Project Title	Principal Grantee & Institute	Project Title / Duration	Total Allocation (Rs)
RG/2000/BG/09	<p>Dr. D.D.N. de Silva, & Dr I.S. Abeygunawardena</p> <p>Dr R.Priyankarage, Dr A. Horadagoda Dr P. Abeynayake</p> <p>Dr H. Abeygunawardena, Dr P Abeynayake, Dr I.S. Abeygunawardena Dr A.S. Abeyratne, Prof C. Bogahawatte</p> <p>Dr L.N.A. de Silva, Dr T. Dillepan, Dr P.G.A. Pusphakumara & Dr P.Abeynayake</p> <p>Dr I. Silva</p> <p>Faculty of Veterinary Medicine & Animal Science Univ. of Peradeniya</p>	<p>Identification of the species and development of a specific diagnostic test for Canine Ehrlichiosis</p> <p>Determination of bacteriological quality of milk with special reference to human pathogens transmitted through milk</p> <p>Further studies on fertility in cattle : microbiology of reproductive tract, pharmacokinetics of therapeutic agents, efficacy of antimicrobial treatment, and estimation of cost and benefits of veterinary interventions</p> <p>Studies of mastitis : identification of pathogens, determination of antibiotics sensitivity and efficacy of anti microbial treatment in dairy cows</p> <p>Study on serum /plasma electrophoretic pattern of domesticated and exotic animals</p> <p>01 year</p>	500 000.00
RG/2000/BG/10	<p>Dr (Mrs) D.T.P. Liyanage National Institute of Health Science Kalutara</p>	<p>Evaluation of selected aspects of National Cervical Screening programme and to study the effectiveness of an educational intervention on utilization of cervical screening in Well Women clinics in Kalutara Ddistrict.</p> <p>01 year</p>	419 045.00

Biological Sciences

Grant No.	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
RG/2000/B/01	Dr. B. M. P. Singhakumara Dept. of Forestry & Emt. Science University of Sri Jayawardenapura Nugegoda	Light tolerance rankings for rain trees of the Sinharaja hill region, Southwest, Sri Lanka 3 years	526 800. 00
RG/2000/B/02	Dr (Ms) M. Hettiarachchi Dr. U. P. K. Epa Prof. M. J. S. Wijeratne Faculty of Science University of Kelaniya Kelaniya	Studies on limnological and microbial changes in relation to food quality and feeding regime in some grow-out ponds of <i>Penaeus monodon</i> 02 years	420 632. 00
RG/2000/B/03	Prof. S.W. Kotagama Dept. of Zoology Univ. of Colombo Colombo 03	Behaviour and territorial characters of spot - winged Thrush <i>Zoothera spiloptera</i> in selected forest habitats of Sri Lanka 01 year	234 000. 00

Biotechnology

Grant No.	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
SIDA/2000/BT/01	Dr. W. R. A.K.J.S. Rajapaksha Dr. A. D. N. Chandrasiri Dr. I. D. S. I. P. Thilakaratne Veterinary Research Institute Gannoruwa Peradeniya	Development of PCR based technique for identification of meat of various species of animals. 02 years	988 370. 00

Grants awarded under Indo-Sri Lanka Science & Technology Cooperation – Biotechnology programme

Grant No.	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
SIDA/(IL)/2000/BT/02	<p>Prof. S. Widanapathirana Dr. (Ms) S. I. Abeygunawardena Dr. D. L. Jayaratne Dept. of Microbiology University of Kelaniya</p> <p>Dr. S. K. Kaul Director-grade Scientist National Environmental Engineering Research Institute (NEERI) India</p>	<p>Evaluation of biotechnological process for treatment of wastewater generated from textile and desiccated coconut industries</p> <p>3 years</p>	<p>1 939 600. 00</p> <p>I. Rs. 1 237 000. 00</p>
SIDA/(IL)/2000/BT/03	<p>Dr. Lakshmi S. R. Arambawela Dr. Sirimal Premakumara Industrial Technology Institute</p> <p>Dr. Shakti N. Upadhyay Immunopharmacology laboratory National Institute of immunology India</p>	<p>Development of therapeutic products based on plant derived immunomodulatory compounds</p> <p>3 years</p>	<p>2 760 000.00</p> <p>I. Rs. 1 932 000.00</p>

Chemical & Earth Sciences

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
RG/2000/C/01	Dr. Priyani Paranagama Dept. of Chemistry Dr. Krishanthi Abeywickrema Dept. of Botany Univ. of Kelaniya Kelaniya Dr. L. Nugaliyadde RRDI Batalagoda, Ibbagamuwa	Bioactive plant components in managing insects and fungi in stored rice (<i>Oryza sativa</i>) 03 years	1 048 685. 00
RG/2000/C/02	Dr. Bimali Jayawardene Dept. of Chemistry Dr. Krishanthi Abeywickrema Dept. of Botany Univ. of Kelaniya Kelaniya	Investigation of biochemical changes following post harvest treatment of banana with fungicidal essential oils. 02 years	480 000. 00
RG/2000/C/03	Dr. M.D.P. de Costa Dept. of Chemistry Univ. of Colombo Colombo 03	Ion selective fluoroionophores based on chromophore linked hydroxamic acid derivatives 03 years	762 500. 00

Energy

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
SIDA/2000/EP/01	Mr. Shavindranath Fernando Sri Lanka Energy Managers Association Colombo 07 Deputy General Manager Generation Planning Branch Ceylon Electricity Board	Analysis of energy saving potential by increased use of daylight in open office spaces in Sri Lanka 02 years	436 620. 00

Engineering & Built Environment

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
RG/2000/E/01	Dr. B.M.W.P.K. Amarasinghe Dept. of Chemical Engineering Univ. of Moratuwa	Reverse flow cyclones for the collection of tea dust: Design and application 01 year	254 000. 00
RG/2000/E/02	Ms. N.T. Amarasinghe Mr. K.R. Dayaratne Mr. M.S.N. Perera Industrial Technology Institute Colombo 07	Comparative study of the new technology introduced by ITI for distillation of leaf oils versus the traditional and to find the possibilities of reducing production cost. 01 year	588 188. 00
RG/2000/BE/04	Dr. R. Emmanuel Dept. of Architecture Univ. of Moratuwa Moratuwa	Lighting and the "Science of Place" : A survey of secondary sensation induced by current lighting design practice in Sri Lankan lecture theatres. 05 months	24 762. 50

Health Sciences

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
RG/2000/M/01	Dr(Mrs) S.M.D. Nalini Wickremasinghe Dept. of Biochemistry Fac. of Medical Sciences Univ. of Sri Jayawardenepura Nugegoda Prof. Ira Thabrew Dept. of Biochemistry Fac. of Medicine Univ. of Kelaniya Ragama	Investigation of the anti-tumour properties of some traditional medicines in Sri Lanka 02 years	508 900.00
RG/2000/M/02	Dr. G.A.S. Premakumara Industrial Technology Institute Colombo 07 Prof. H.R. Seneviratne Head/Dept. of Obstetrics & Gynaecology Fac. of Medicine Univ. of Colombo Kynsey Road Colombo 08	Evaluation of human sperm motility stimulant S-ACT -1 of Sri Lankan marine red alga <i>Gelidium acerosa</i> as a potential sperm stimulant in medically assisted reproduction 03 years	360 000.00

Man and Biosphere

Grant No	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
RG/2000/MAB/01	Prof. C.V.S. Gunatilleke Dr. K.U. Tennakoon Prof. I.A.U.N. Gunatilleke Dept. of Botany University of Peradeniya Peradeniya.	Understanding the Performance of Selected Forest Species Providing Non Timber Forest Products. 03 years	1 092 000. 00
RG/2000/MAB/02	Dr Devaka K. Weerakoon Dept. of Zoology University of Colombo Colombo 3.	Diversity, abundance, and species richness of canopy arthropods in Knuckles range, and its spatial and temporal distribution related to canopy structure. 02 years	615 870. 00

Natural Resources

Grant No	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
RG/2000/NR/01	Dr. M.G.M.U. Ismail Mr. Sarath Jayatilleke Mr. Ruwan Gallage ITI Bauddhaloka Mawatha Colombo 07	Development of an oil fired kiln for the manufacture of high quality dolomitic lime as an alternative for coral based lime. 02 years	1 795 000. 00

Physical & Mathematical Sciences

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
RG/2000/P/01	Dr. D.U.J. Sonnadara Dept. of Physics Dr. D.R. Jayewardene Dept. of Mathematics Univ. of Colombo Colombo 03	Exploring the spatial and temporal variations of rainfall and contributing towards the understanding of the forecasting of rainfall in Sri Lanka 02 years	375 625. 00
RG/2000/P/02	Dr. A.A.J. Perera Dept. of Mathematics Univ. of Peradeniya Peradeniya	Application of Orthogonal cocycles to relative difference sets and group divisible designs 02 years	340 000. 00
RG/2000/P/03	Prof. D.A Tantrigoda Dept. of Physics Univ. of Sri Jayawardenapura Nugegoda	Interpretation of gravity anomalies over the Indian Ocean regions around Sri Lanka 02 years	550 000. 00

Science Education & Popularisation

Grant No	Grantee/s/Institution/s	Project Title/Duration	Total Allocation (Rs)
RG/2000/SE/01	Mrs. C. Warakadeniya K/Ratanajothi M.V. Udathalawinna	Dramatization of teaching to popularize science among Sri Lankan students 01 year	188 086. 00

Social Sciences

Grant No.	Grantee/s & Institution/s	Project Title & Duration	Total Allocation (Rs)
SIDA/2000/SS/01	Mrs. R Umapathisivam Dept. of Agricultural Economics Faculty of Agriculture Eastern University, Vantharumoolai, Chenkaladi.	Study on income generating agro-processing activities of women in the Batticaloa District 08 months	68 215. 00
SIDA/2000/SS/02	Dr. M W Amarasiri de Silva Department of Sociology Faculty of Arts University of Peradeniya Peradeniya.	Relocation of internally displaced persons (IDPs) into the host communities in Puttalam/Anuradhapura District, Sri Lanka: Socio-political and planning implications 1 Year	458 240.00

BLOCK GRANTS – 2000

Project Title	Principal Grantee & Institute	Project Title / Duration	Total Allocation (Rs)
RG/2000/BG/01	Prof. Uma Coomaraswamy Open University of Sri Lanka Nawala	Design and production of interactive media components for learning science to carry out evaluation of such components developed from the project 01 year	500 000.00
RG/2000/BG/02	Dr L.S.R. Arambewela Industrial Technology Institute Colombo 07.	Development of Bio-pesticides from neem 01 year	490 000.00
RG/2000/BG/03	Mr E.S.K. Soysa Ceramics Research & Development Centre Thumbowila, Piliyandala.	Study of alternative resources for feldspar in Ceramic Industry 01 year	500 000.00
RG/2000/BG/04	Dr J. Ratnasekera Mrs. S. W. Wickramasinghe Rajarata University of Sri Lanka Polgolla	Investigation of increasing solubility of Eppawala phosphate mineral deposit by thermal treatment and other methods to use the mineral as a soluble fertilizer Mixed species foraging flocks in knuckles region 01 year	500 000.00
RG/2000/BG/05	Mr N.A. Amaradasa Dept. of Meteorology Colombo 07.	Research on Climate change 01 year	500 000.00
RG/2000/BG/06	Dr Dudley Dissanayake Gampaha Wickramarachchi Ayurveda Institute, Univ. of Kelaniya, Yakkala.	Medicinal Plant Survey 01 year	500 000.00

Project Title	Principal Grantee & Institute	Project Title / Duration	Total Allocation (Rs)
RG/2000/BG/07	Dr R.P. Ranan-Eliya Dr R.P. Ranan- Eliya Institute of Policy Studies of Sri Lanka Colombo 03.	Public opinion and health care Incidence of taxation and equity in financing of health care 01. year	500 000.00
RG/2000/BG/08	Prof B.S.B.Karunaratne Dr D.M.D.Dissanayake Prof. M.De Silva Dr. P.H.P. Fernando Prof. P.A.J. Perera Dr. P.H. Amarasinghe Prof. F.P.Amarasinghe Prof. M.A. Careem Prof. M.A.K.L. Dissanayake Dr. D. Jayawickrama Postgraduate Institute of Science	Preparation and Characterization of ZrSiO ₄ based materials for fuel cell applications Species delimitation of the genus <i>Stemonopus</i> (family Diptercarpaceae) Diversity and Distribution of macrocapods in the mangroves and associated estuaries in the Puttalam and Negombo areas Modification of coconut based dietary fat in the Sri Lankan diet with soya oil to reduce the risk of coronary heart disease: Analysis of serum lipids of guinea pigs fed with coconut and/or soya base diets Molecular taxonomy of cattle ticks <i>Boophilus sp.</i> and <i>Phipicephalus sp.</i> in Sri Lanka Application of electronically conducting polymers Synthesis and Characterization of novel solid polymer electrolytes based on PEO (poly-ethylene oxide) and PAN (poly- acrylonitrile) Investigation of intermolecular interactions using molecular modelling techniques 01 year	500 000.00

Project Title	Principal Grantee & Institute	Project Title / Duration	Total Allocation (Rs)
RG/2000/BG/09	Dr. D.D.N. de Silva, & Dr I.S. Abeygunawardena	Identification of the species and development of a specific diagnostic test for Canine Ehrlichiosis	500 000.00
	Dr R.Priyankarage, Dr A. Horadagoda Dr P. Abeynayake Dr H. Abeygunawardena, Dr P Abeynayake, Dr I.S. Abeygunawardena Dr A.S. Abeyratne, Prof C. Bogahawatte Dr L.N.A. de Silva, Dr T. Dillepan, Dr P.G.A. Pusphakumara & Dr P.Abeynayake Dr I. Silva Faculty of Veterinary Medicine & Animal Science Univ. of Peradeniya	Determination of bacteriological quality of milk with special reference to human pathogens transmitted through milk Further studies on fertility in cattle : microbiology of reproductive tract, pharmacokinetics of therapeutic agents, efficacy of antimicrobial treatment, and estimation of cost and benefits of veterinary interventions Studies of mastitis : identification of pathogens, determination of antibiotics sensitivity and efficacy of anti microbial treatment in dairy cows Study on serum /plasma electrophoretic pattern of domesticated and exotic animals 01 year	
RG/2000/BG/10	Dr (Mrs) D.T.P. Liyanage National Institute of Health Science Kalutara	Evaluation of selected aspects of National Cervical Screening programme and to study the effectiveness of an educational intervention on utilization of cervical screening in Well Women clinics in Kalutara Ddistrict. 01 year	419 045.00

Project Title	Principal Grantee & Institute	Project Title / Duration	Total Allocation (Rs)
RG/2000/BG/11	Dr H.M.J.P. Vidanapathirana Dr. Latha Hapugoda Health Education Bureau Colombo 08	Study of the effects of two different educational intervention programmes to promote knowledge, attitude and performance on primary eye care among public health midwives 01 year	356 910.00
RG/2000/BG/12	Dr S.R.H. Hoole Faculty of Engineering Univ. of Peradeniya	Establishing the research infrastructure for the new computer science programme in the Faculty of Engineering 01 year	500 000.00

NATIONAL SCIENCE FOUNDATION

Balance Sheet as at 31-12-2000

As at 31-12-99 (RS.)		RS.	RS.	RS.
	Funds Employed			
(32,372,856.62)	NSF Fund	(36,328,203.94)		
697,000.00	Add : Drawings from Treasury	250,000.00		
768,646.35	Accquisitions of assets	388,473.75		
(30,907,210.27)			(35,689,730.19)	
(5,420,993.67)	Less : Excess of Expenditure over income		(8,836,447.72)	
(36,328,203.94)				(44,526,177.91)
6,772,695.34	Documentation Unit Capital Fund	8,180,357.32		
1,500,000.00	Add: Drawings from Treasury	1,110,000.00		
8,272,695.34			9,290,357.32	
92,338.02	Less: Net Expenditure Note 1-1		58,664.74	
8,180,357.32				9,231,692.58
4,578,866.90	Research Grants Fund	5,690,305.68		
17,903,000.00	Add: Drawings from Treasury	13,119,000.00		
22,481,866.90	Balance funds in the Scientific Manpower Project fund & Balance provisions	1,397,159.43	20,206,465.11	
22,481,866.90				
16,791,561.22	Less: Net Expenditure - Note 1-2		14,479,671.87	
5,690,305.68				5,726,793.24
1,898,096.90	Man & the Biosphere Fund	1,908,115.62		
250,000.00	Add: Drawings from Treasury	750,000.00		
2,148,096.90			2,658,115.62	
239,981.28	Less : Expenditure - Note 1-3		746,618.57	
1,908,115.62				1,911,497.05
772,730.08	Miscellaneous Funds	774,237.41		
1,493,000.00	Add: Drawings from Treasury	2,000,000.00		
	Balance funds in W/c fund A/C	1,034,025.20		
2,265,730.08			3,808,262.61	
1,491,492.67	Less : Net Expenditure - Note 1-4		2,009,263.08	
774,237.41				1,798,999.53

153,497.94	Scientific Man Power Project Fund			
-	Add: Drawings from Treasury	-		
153,497.94			-	
-	Less: Expenditure		-	
153,497.94				
1,034,025.20	Working Committee Fund			
-	Add: Drawings from Treasury	-		
1,034,025.20			-	
-	Less: Expenditure		-	
1,034,025.20				
80,588,192.78	Foreign Aid Fund	75,762,068.19		
19,732,750.00	Add: Drawings from Treasury	8,787,133.65		
1,015,217.00	Treasury Deposit	-		
101,336,159.78			84,549,201.84	
25,574,091.59	Less: Net Expenditure Note 1.5		12,760,302.92	
75,762,068.19				71,788,898.92
47,622,660.00	Capital Reserves			47,622,660.00
	Current Liabilities			
1,533,996.11	Creditors		994,577.08	
826,369.34	Accrued Charges		1,360,231.00	
7,049,846.55	Provisions		5,828,300.00	
5,575.11	Store-keepers refundable security deposits		5,960.22	
39,450.00	Tender Deposits		39,450.00	
9,455,237.11				8,228,518.28
5,842.25	Suspense A/C			-
				101,782,881.69

NATIONAL SCIENCE FOUNDATION

As at 31.12.1999		Cost as at 01.01.2000	Additions Disposals	Accumulated Depreciation	Net Balance
RS.		RS.	RS.	RS.	RS.
	<u>Represented by</u>				
	<u>Non Current Assets</u>				
42,325,515.45	Land	42,325,515.45	3,000.00	-	42,328,515.45
1,438,404.85	Buildings	4,058,365.36	19,927.14 (47,750.00)	2,769,047.51	1,309,244.99
8,211,281.56	Office Equipment & Furniture	22,740,296.72	823,709.70	18,320,416.16	5,195,840.26
1,011,618.35	Motor Vehicles	6,501,264.05	3,289,774.90	6,829,895.70	2,961,143.25
15,565.00	Motor Bicycles	259,951.14	4,000.00	260,751.14	3,200.00
1,100.00	Bicycles	13,170.50	-	13,170.50	-
-	Sports Equipment	1,324.00	-	1,324.00	-
190,041.55	Accessories & Miscellaneous	581,446.92	56,580.21	467,651.37	170,375.76
581,269.91	Library Books	1,652,178.73	61,563.37	1,103,898.82	609,843.28
1,776,398.76	Scientific & Laboratory Equipment out on loan	30,726,698.98	88,425.00 (2,803.00)	29,739,866.22	1,075,257.76
3,797,893.35	Documentation Equipment	9,038,517.73	992,153.13	5,871,237.38	4,156,830.48
59,349,088.78		117,898,729.58	5,288,780.45	65,377,258.80	57,810,251.23
650,000.00	Sea Shells collection			-	
13,953.64	Telephone Installation			13,953.64	
663,953.64					13,953.64
	<u>Current Assets</u>				
764,376.04	Stocks		680,937.76		
6,615,895.14	Debtors		6,220,833.65		
3,917,218.40	Prepayments		953,445.03		
70,109.45	Deposits		70,109.45		
38,433,855.42	Treasury Deposits		24,376,950.52		
-	Government Revenue A/C		10,033,038.55		
2,782,214.30	Balance at Bank - A/C Nos. 4530800224	1,173,464.61			
1,329,278.22	4530800232	101,363.67			
291,897.96	4530124768	319,623.96			
5,491.46	4530204966	2,313.96			
15,000.00	Petty Cash	15,000.00			
14,188.86	Cash in hand	5,624.69			
5,575.11	National Savings Bank A/C	5,960.22			
54,245,100.36			1,623,351.11		43,958,666.07
-	Suspense A/C				10.75
114,258,142.78					101,782,881.69

NATIONAL SCIENCE FOUNDATION

Income and Expenditure Account as at 31-12-2000

As at 31.12.99 (RS.)		RS.	RS.	RS.
20,150,000.00	Drawings from Treasury			20,063,000.00
	Incomes for the year			
203,893.39	Interest received		207,905.93	
68,085.40	Sundry Income		316,547.00	
442,486.05	Sale of Publications		362,701.45	
82,531.00	Photocopy receipts		26,871.69	
295,877.53	Receipts from printing outside jobs		156,685.40	
511,900.96	SLSTIC Income Note - 1.8		225,281.00	
39,780.00	Profit on sale of fixed Assets		10,125.00	
1,500,000.00	10% Administration cost - Foreign Aid		-	
87,591.41	RG/95/MAB/Grant		-	
874.50	Cash Discount received		7,775.67	
-	Income on consultation		6,000.00	
				1,319,893.14
				21,382,893.14
	Less: Expenditure for the year			
	Office Expenditure			
36,554.00	Travelling & Allowances for Board Members	56,721.75		
34,515.41	Refreshments for meetings	44,600.65		
25,809.63	Printing & Publications	52,859.88		
96,879.04			154,182.28	
	Staff Emoluments			
10,391,261.27	Salaries & Allowances	11,588,000.72		
1,451,701.90	Employees Provident Fund	1,578,502.07		
290,902.93	Employees Trust Fund	315,575.01		
519,332.50	Provisions for Retiring Gratuity	595,715.00		
214,827.26	Overtime	237,875.78		
60,286.04	Holiday Payment	26,703.01		
50,051.25	Uniforms	61,572.60		
43,512.70	Staff Training	65,518.42		
13,021,875.85			14,469,462.61	
	Office Administration			
202,994.00	Travelling (Official)	164,659.00		
625,577.37	Stationary & Consumables	590,480.18		
492,314.48	Electricity	595,213.79		
631,845.93	Telephone	607,169.95		
112,730.00	Postage	104,192.50		
106,875.00	Audit fees	246,980.00		
61,200.00	Legal fees	1,000.00		
16,770.00	Bank charges	15,520.00		
52,006.50	Medical expenses	44,144.00		

190,629.37	Advertising	118,778.55		
867,137.35	Maintenance of Motor Vehicles	967,259.99		
313,548.26	Maintenance of Office Equipment & Furniture	277,194.55		
141,301.63	Maintenance of Building	131,811.47		
101,000.00	Staff Welfare	113,000.00		
270,490.46	Insurance	69,176.45		
77,865.12	Water Consumption charges	61,324.81		
340,233.24	Security Services	420,390.88		
6,255,385.00	Depreciation	6,842,571.00		
58,837.59	Sundry Expenses	65,262.34		
1,477,560.44	10% Administration cost expenditure	-		
52,884.05	Exhibitions & Publicity	48,074.68		
6,485.15	Provisions for doubtful debtors	1,110.48		
286.00	Loss from sale of fixed assets	5,400.00		
96,939.60	House rent	81,075.50		
35.90	Loss of stocks	15.00		
-	Bad debts	713.28		
-	Donation to the Mesuam	650,000.00		
12,552,932.44	Others		12,222,518.40	
5,456.25	Science & Technology Indicators Unit	-		
71,190.31	National Awards/ NSF Awards	-		
395,456.70	Steering Committees Note 1.6	474,070.11		
1,090,971.19	Sri Lanka Scientific & Technical Information Center - Note 1.7	931,624.28		
122,787.20	Consultancies for NSF work	-		
1,072,575.50	Subscriptions to International Scientific Organizations	1,380,920.82		
4,200.00	Publications arising out of Steering Committees	23,793.02		
392,380.68	Special Scientific Fellowships	499,702.40		
190,433.75	Expenditure out of SLSTIC Income	-		
196,875.00	Expenditure out of NSF Journal Subscriptions	63,066.94		
3,542,326.58			3,373,177.57	
(5,830,993.67)	Excess of Expenditure over Income			30,219,340.86
50,000.00	Less : Prior Year Adjustment (Net)			(8,836,447.72)
(5,780,993.67)				-
360,000.00	Excess Capital Reserve			-
(5,420,993.67)				-

Cash Flow Statement

Cash Flows from Operating Activities

Net excess of expenditure over income	-	8,836,447.00
 <u>Adjustments for</u>		
Depreciation	-	(6,842,571.00)
Loss from sale of fixed assets	-	(5,400.00)
Donation to the museum	-	(650,000.00)
Acquisition of assets	-	(388,474.00)
Provisions for Gratuity	-	(595,715.00)
Provisions for doubtful debts	-	(1,110.00)
Profit on sale of fixed assets	-	10,125.00
Cash Imprest written off from doubtful debts-		2,594.00

Operating loss before working capital Changes	-	(365,896.00)
 Net decrease in trade other receivables	-	 3,360,307.00
Decrease in inventories	-	83,438.00
Net decrease in trade payables	-	(11,014.00)

Cash Generated from operations	-	3,066,835.00
 Net cash from operating activities	-	 3,066,835.00

Cash flows from Investing Activities

Outflow from activities	-	(30,628,122.00)
Purchase of assets	-	(5,339,133.00)
Proceeds from sale of equipment	-	(40,125.00)
 Net cash used in investing activities	-	 (35,927,130.00)

Cash Flows from Financing Activities

Contribution from Government	-	17,229,000.00
Foreign Aid	-	12,811,000.00

Net cash from financing activities-		30,040,000.00

Net decrease in cash & cash equivalents	-	(2,820,295.00)
 Cash & Cash equivalents at beginning of period		 4,443,646.00

Cash & Cash equivalents at end of period	-	1,623,351.00
		=====

NOTES ON ACCOUNTS

1. **General Accounting** - The Financial Statements have been prepared in accordance with generally accepted accounting principles on a historical cost basis. The fundamental accounting assumptions and policies relevant in accounting have been adhered to on a consistent basis as in the previous year.

1.1 **Documentation Unit Capital Fund Expenditure**

	RS.
1. SLSTIC Equipment	992,153.13
2. SLSTIC Books	57,406.87
3. SLSTIC Workshop & Seminar	58,664.74
	1,108,224.74
Less : Cost of Equipment & Books	1,049,560.00
992,153.13 + 57,406.87	58,664.74
	=====

1.2 **Research Grants Expenditure**

	RS.
Actual expenditure for the year	14,438,458.40
Zoological Survey expenditure	759,388.64
	15,197,847.04
Less : Cost of Equipment	88,425.00
	15,109,422.04
Less: Prior year adjustments (Net)	629,750.17
	14,479,671.87
	=====

1.3 **Man & the Biosphere Expenditure**

	RS.
1. RG/2000/MAB/01	93,125.00
2. RG/2000/MAB/02	167,515.00
3. RG/99/MAB/01	188,250.00
4. RG/99/MAB/03	180,800.00
5. MAB/1.3/03	116,928.57
	746,618.57
	=====

1.4	<u>Miscellaneous Fund Expenditure</u>		RS.
1.	Participation in International Scientific Work	-	52,013.23
2.	Research Training	-	531,387.08
3.	Seminars & Symposia A/C	-	877,391.51
4.	Special Publications A/C	-	453,269.95
5.	Intellectual Property Rights	-	95,201.31

			2,009,263.08
			=====

1.5	<u>Foreign Aid Expenditure</u>		RS.
	SAREC Expenditure	-	16,251,559.02
	Less: Cost of Equipment, Motor Vehicles	-	3,491,256.10
	Books		-----
	60906.20 + 129583.50 + 3288574.90 + 3191.50		12,760,302.92
			=====

1.6	<u>Steering Committees Expenditure</u>		RS.
1.	Agriculture & Animal Husbandry S/C	-	30,483.94
2.	Biotechnology S/C	-	42,573.25
3.	Biological Sciences S/C	-	40,534.00
4.	Chemical Sciences S/C	-	45,579.50
5.	Editorial S/C	-	35,896.75
6.	Energy S/C	-	11,274.00
7.	Engineering & Built Environment S/C	-	19,212.00
8.	Health Sciences S/C	-	38,081.00
9.	Natural Resources S/C	-	9,126.00
10.	Physical & Engineering Sciences S/C	-	87,871.65
11.	Social Sciences Research S/C	-	51,226.90
12.	S & T Information S/C	-	19,971.50
13.	Science Education S/C	-	33,776.62
14.	Traditional Medicine S/C	-	8,463.00

			474,070.11
			=====

1.7 **Sri Lanka Scientific & Technical Information Center Expenditure**

			RS.
1.	SLSTIC Maintenance & repairs	-	28,084.29
2.	SLSTIC Periodicals	-	417,124.06
3.	SLSTIC Paper & Board	-	14,999.91
4.	SLSTIC Consumables	-	282,112.49
5.	SLSTIC Miscellaneous	-	20,228.04
6.	SLSTIC Publications & Publicity	-	169,075.49

			931,624.28
			=====

1:8 **SLSTIC Income****RS.**

1.	Income received from WINISIS	-	50,000.00
2.	Other Income	-	14,781.00
3.	Internet membership fees	-	160,500.00

			225,281.00
			=====

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

Depreciation has been provided on original cost or at valuation on a straight-line basis consistent with that of the previous year and is calculated to write off the assets over their estimated useful lives.

2:1 **Debtors****RS.**

Total Debtors	-	6,291,554.24
Less: Provision for doubtful debts	-	70,720.59

Provision has been provided for the debts outstanding over 3 years.

3. **Liabilities**3:1 **Creditors**

Creditors amounted to RS. 994,577.06 Represents monies held by NSF as given below

RS.

1.	CSC A/C	-	28,782.87 -
2.	Sundry Creditors	-	17,206.41
3.	CSC funds received for Remote Sensing Seminar	-	24,098.13
4.	Fauna & Flora Project A/C	-	63,410.00
5.	Genetic Resources A/C (CSC funds)	-	104,815.00 -
6.	Mobile Science exhibition A/C	-	2,313.96 -
7.	MAB Seminar A/C	-	175,004.12
8.	RG/89/IS/03 A/C	-	65.75 -
9.	Staff Creditors	-	716.58
10.	Funds received for preparation of bio-diversity report A/C	-	11,648.08
11.	Man Power Survey A/C	-	483,105.95
12.	ADB Project	-	83,410.21

994,577.06

=====

3:2 **Employees Benefit**

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

3:3 Retiring Gratuity

Provisions have been made in the accounts in respect of liability for retiring gratuity.

Amount paid for the year	
Provisions for the year	RS. 519,715.00
	=====

6. Publications for the value of	RS. 2,684,692.00
(Valued at selling price) is available with us.	=====

7. NSF owns 18 vehicles. They are located as follows

AT NSF	-	10
With Research Grantees	-	8

		18
		==

6. Funds drawn from the Treasury during 2000

Consolidated Funds	-	RS. 17,229,000.00
		=====
Recurrent Funds	-	RS. 20,063,000.00
		=====
Foreign Aid Funds	-	RS. 12,811,000.00
		=====

Funds drawn from the Treasury from 1968 to 2000

Consolidated Funds	-	RS. 187,620,276.45
Foreign Aids	-	RS. 220,629,164.13

Schedule - 1**Provisions**

		RS.
1.	Provisions for Retiring Gratuity -	5,828,300.00

		5,828,300.00
		=====

Schedule - 2**Accured Charges**

		RS.
1.	Audit fees 96,97,98,99 & 2000 -	637,030.00
2.	Overtime -	24,257.71
3.	Expenditure out of Sundry Income A/C-	702.83
4.	Special Publication A/C -	3,829.85
5.	ADB Expenditure -	4,062.19
6.	SAREC/09/Gen -	2,100.51
7.	SLSTIC Publication & Publicity A/C -	216,128.60
8.	Physical & Engineering Sciences S/C -	2,981.25
9.	SLSTIC Consumables A/C -	12,965.62
10.	Sundry expenses -	420.00
11.	Traditional Medicine S/C -	300.00
12.	Office Travelling -	12,185.00
13.	Special Scientific Fellowship -	10,674.47
14.	Holiday payment -	646.25
15.	Electricity -	41,194.92
16.	Water Consumption -	921.43
17.	Salaries & Allowances A/C -	1,788.50
18.	Maintenance of Motor Vehicles A/C -	98,897.01
19.	Maintenance of Building -	591.75

20.	Telephone A/C	-	56,683.01
21.	Travelling & allowances for Authority - members A/C	-	2,937.00
22	Stamp Imprest A/C	-	117.00
23.	Medical Expenses A/C	-	1,000.00
24.	House Rent A/C	-	130.50
25.	SAREC Expenditure control A/C (180737.60+46370.00)	-	227,107.60
26.	SAREC cash imprest control A/C	-	578.00

			1,360,231.00
			=====

Schedule - 3**Stocks**

			RS.
1.	Stationary & Consumables - Stores	-	597,327.76
	Printing	-	19,800.00
2.	Coral Reef Posters	-	50,860.00
3.	Research Grants	-	4,000.00
4.	Stamps	-	500.00
5.	Horton Plane Video Cassettes	-	8,450.00

			680,937.76
			=====

Schedule- 4**Sundry Debtors**

			RS.
1.	Research Grants Cash Imprest - Schedule 4-1	-	20,500.00
2.	SERC Cash Imprests - Schedule 4.2	-	573.00
3.	Miscellaneous Cash Imprest - Schedule 4.3	-	315,027.08
4.	SAREC Cash Imprest - Schedule 4.4	-	59,159.90
5.	Sundry Debtors	-	888,737.31
6.	Staff Debtors	-	264,000.40

7.	Loans to staff – Distress Loan – Schedule 4.5	-	3,314,383.00
8.	- DO - Motor bicycle – Schedule 4.6	-	1,247,858.00
9.	- DO - Bicycle loan - Schedule 4.7	-	3,122.00
10.	- DO - Vehicle loan - Schedule 4.8	-	132,000.00
11.	Festival Advance - Schedule 4.9	-	45,600.00
12.	Bandaranayake Memorial Foundation	-	593.55

			6,291,554.24
Less:	Provisions for doubtful Debts	-	70,720.59

			6,220,833.65

Schedule - 5

Prepayments

			RS.
1.	Insurance charges	-	19,379.59
2.	Maintenance of Motor vehicles	-	24,216.00
3.	Maintenance of office equipment	-	49,761.42
4.	SLSTIC Miscellaneous	-	4,849.32
5.	SLSTIC Periodicals	-	110,283.36
6.	SAREC Expenditure A/C	-	146,231.45
7.	SLSTIC – Maintenance & Repairs	-	5,666.67
8.	SLSTIC – Books	-	3,242.50
9.	Postage	-	9,817.60
10.	ADB Expenditure	-	6,000.00
11.	Expenditure re NSC Journal	-	7,169.06
12.	Subscriptions to International Scientific Unions CSC	-	557,219.36
13.	SAREC/09/GEN	-	8,913.70
14.	Miscellaneous & Accessories	-	695.00

			953,445.03

Schedule - 6**Deposits**

			RS.
1.	Government Publications Bureau	-	929.45
2.	Ceylon Oxygen Ltd.	-	4,000.00
3.	Felix Perera & Son	-	42,000.00
4.	Postmaster General	-	1,730.00
5.	Ministry of Industries	-	1,000.00
6.	Director of Telecommunication	-	450.00
7.	Telecom	-	5,000.00
8.	Ceylon Electricity Board	-	10,000.00
9.	Telecom - I.D.D facilities	-	5,000.00

			70,109.45

Schedule - 7**Depreciation**

				RS.
1.	Building	5%	-	149,087.00
2.	Office equipment & furniture	20%	-	3,803,751.00
3.	Miscellaneous & Accessories	20%	-	76,246.00
4.	Bicycles	25%	-	1,100.00
5.	Motor Vehicles	20%	-	1,340,250.00
6.	Motor Bicycles	20%	-	16,365.00
7.	Documentation equipment	10%	-	633,216.00
8.	Scientific equipment out on loan	10%	-	789,566.00
9.	Library books	5%	-	32,990.00

				6,842,571.00



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கணக்காய்வாளர் தலைமை அபிப்பதி திணைக்களம்

AUDITOR-GENERAL'S DEPARTMENT



මගේ අංකය
எனது இல.
My No.

EC/R/NSF/
FA/2000

ඔබේ අංකය
உமது இல.
Your No.

දිනය
திகதி
Date

22 April 2002

The Chairman
National Science Foundation

Report of the Auditor General on the accounts of the
National Science Foundation for the year ended
31 December 2000 in terms of Section 14(2)(c)
of the Finance Act No.38 of 1971.

The audit of accounts of the National Science Foundation for the year ended 31 December 2000 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 of the Finance Act No.38 of 1971. My observations which I consider should be published with the annual report of the Foundation 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 furnished to the Chairman of the Foundation on 21 September 2001.

1:2 Scope of Audit

Audit opinion, comments and findings in this report are based on a review of the financial statements presented to audit and substantive tests of samples of transactions. The scope and the extent of such review and tests were such as to enable as wide an audit coverage as possible within the limitations of staff, other resources and time available to me. The audit was carried out in accordance with Sri Lanka Auditing Standards, methods and practices to obtain reasonable assurance as to whether the financial statements are free of material misstatements. The audit included examination of evidence supporting the amounts and disclosures in financial statements and assessment of accounting principles and significant estimates and judgements made in the preparation of financial statements, evaluation of their overall presentation and determining whether accounting policies adopted were appropriate, consistently applied and adequately disclosed. Sub-sections (3) and (4) of Section 13 of the Finance Act No. 38 of 1971 gives discretionary powers to the Auditor General to determine the scope and extent of the audit.

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කොළඹ 07, ශ්‍රී ලංකාව

செய்திர அலுவலகம்,
கொழும்பு 07, இலங்கை

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2. Accounts

2:1 Audit Opinion

Except for the effects of the adjustments arising from the matters referred to in paragraph 2:3 of this report, I am of opinion that the financial statements have been satisfactorily prepared to present fairly in all material respects, the financial position of the Foundation as at 31 December 2000 and the results of its operations for the year then ended in accordance with Sri Lanka Accounting Standards other than the Standards referred to in this report.

2:2 Financial Results

The activities of the Foundation are being operated under the General Fund and 7 Special Fund Accounts. According to the accounts presented, the working of the general fund of the Foundation for the year ended 31 December 2000 had resulted in a deficit of Rs.28,899,448 before taking into account the Government Grant for recurrent expenditure as compared with the deficit of Rs.25,980,994 for the preceding year.

The deficit was reduced to Rs.8,836,448 after taking into account the Government Grant of Rs.20,063,000 received for recurrent expenditure of the year under review and the foreign aid. The deficit for the previous year was reduced to Rs.5,830,994 after taking into account the Government Grant of Rs.20,150,000 received for recurrent expenditure for that year.

The activities under special funds had resulted in a deficit of Rs.30,054,522 before taking into account the Government Grant and foreign aid for special funds as compared with the previous year's deficit of Rs.44,189,465. The deficit for the year under review was reduced to Rs.4,288,388 after taking into account the Government Grant of Rs.25,766,134 (including foreign aid) received for activities of the special funds as against the surplus of Rs.2,295,498 for the previous year after taking into account the Government Grant of Rs.41,893,967 (including foreign aid) received for activities of the special funds for the preceding year.

2:3 Comments on Accounts

2:3:1 Accounting Policies

- (i) The policy of the Foundation was to debit purchase of fixed assets from foreign aid project funds to the project fund accounts and credit the same project funds accounts in capitalization of those assets instead of being credited to the general fund. This accounting policy had not been disclosed with the accounts. In consequence of the failure to debit a sum of Rs.23,702,079 being capital expenditure in respect of three funds in respect of the year under review and the preceding year to the respective Foreign Aid Project Accounts, the Project Fund Accounts balances had been overstated by similar amounts.
- (ii) Funds released to the relevant institutions and officers for implementation of projects are accounted for as expenditure at the time of release. As a result, the expenditure had been overstated due to the actual expenditure not being reflected. This accounting policy had not been disclosed.

2:3:2 Inappropriate Disclosures in the Accounts

The following observations are made.

- (i) The worn out main telephone exchange which had been discarded from use about 15 years ago had been shown as a fixed asset with a value of Rs.13,954.
- (ii) A sum of Rs.869,042 relating to 7 receipt and payment accounts had erroneously been brought to account in other accounts.
- (iii) The computer and the printer valued at Rs.61,999 purchased from funds of the National Apprentice and Industrial Training Authority which should have been returned to that Authority after the completion of the Project as per conditions stipulated, had been shown as a fixed asset of the Foundation.

2:3:3 Understatements and Overstatements in the Accounts

- (i) A cheque valued at Rs.5,630 paid in 1999 for supply of water to the Foundation and subsequently dishonoured, had been credited to the Water Supply Charges Account for the year under review thus resulting in the understatement of water supply and accrued expenses by a similar amount.
- (ii) Provision had not been made for gratuity amounting to Rs.111,420 as at 31 December 2000 in respect of 3 employees of the Foundation.

2:3:4 Omissions

Suitable steps had not been taken and adjustments made in the accounts in respect of 69 items of worn out fixed assets costing Rs.1,399,571 which had been discarded from use.

2:3:5 Posting Errors

The profit of Rs.10,125 realised from sale of fixed assets, a loss of Rs.5,400 sustained from sale of other assets and donation of stocks of oysters valued at Rs.650,000 in the year under review had been shown as Rs.645,275 in the Disposal of Assets Account without being transferred to the relevant accounts.

2:3:6 Unreconciled Control Accounts

Balances of 4 control accounts aggregating Rs.25,015,138 had not been reconciled with the balances aggregating Rs.21,688,215 in the relevant subsidiary records and necessary adjustments made in the accounts.

2:3:7 Unsettled Creditors

The balance of Rs.142,875 out of donations received for 4 projects from the Ministry of Science and Technology and the Common Wealth Science Association had been shown in the accounts as creditors for a period ranging from 5 to 10 years without being settled.

2:3:8 Lack of Evidence for Audit

Seven items of assets and liabilities aggregating Rs.60,748,560 could not be satisfactorily vouched or accepted in audit in the absence of required evidence.

2:3:9 Non-compliance with Laws, Rules, Regulations and Management Decisions

The following instances of non-compliance were observed in audit.

Reference to laws, Rules,
Regulations, etc.

Particulars

(a) Finance Act No. 38 of 1971

(i) Section No.8(3)

A draft income and expenditure account and a projected balance sheet had not been prepared in respect of the budget for 2000.

(ii) Section No.13(5)(d)

Half yearly reports on internal audit operations as prescribed by the Auditor General had not been furnished to the Auditor General.

(b) Stamp Duty Act No. 43 of 1982

(i) Gazette Extra-ordinary No.896/12 of 8 November 1995

There were many instances where acknowledgements had been furnished without the prescribed stamp duty or with stamps of a lesser value or without stamps.

(ii) Gazette Extra-ordinary No.945/15 of 6 November 1996 and No/1000/17 of 5 November 1997

Rs. 10 stamps, instead of Rs.100 stamps had been affixed to security bonds and agreements relating to payment of loans to employees.

(c) Financial Regulations of the Democratic Socialist Republic of Sri Lanka

(i) 341(1)

A Register of Counterfoil Books had not been maintained.

(ii) 342(1)

Unused receipt books had been kept unsecured on a rack without locks.

(iii) 342(6)

500 unusable receipts had been kept in stores without being cancelled.

(iv) 1645

Log Books for vehicles had not been maintained.

(d) Public Enterprises Circulars

(i) Circular No. 116 of
24 January 1997

(i) Although resources of Corporations or Boards such as staff should not be utilized for objectives of the Ministry, a female stenographer of the staff of the Foundation had been detailed for service in the Ministry from 1994 to 2000. This officer had been paid salaries and allowances amounting to Rs.349,033 annual bonus amounting to Rs.60,000 and Rs.26,030 on account of unavailed medical leave by the Foundation for the relevant period.

(ii) The consultant of the Man Power Evaluation Project operated by the Ministry had been provided vehicle No.50-8508 of the Foundation, telephone facilities, office accommodation and consumable materials.

- (ii) Circular No.PI/000/TNF dated 10 August 1983 and Section 8(3) of Finance Act No.38 of 1971
- Budget had not been prepared on the format specified in the Circular.

(e) Treasury Circulars

- No.44 of 25 September 1987
- Accounts had not been prepared on the general format specified by the Treasury.

(f) Agreements

- Agreement dated 18 September 1997 signed with the Director General of the Foundation
- A sum of Rs.180,360 to be recovered for breach of agreement signed for proceeding abroad by a Scientific Officer had not been recovered.

(g) Manual of Guidelines issued by the Foundation for International air Travel Grants Project (SAREC -15)

3:2(6)

Many officers who had obtained grants had not yet submitted the reports required to be submitted at the end of the foreign tour and none of the officers had conducted discussions or seminars to impart the knowledge gained to others.

(h) Sri Lanka Accounting Standards

No.21

Although foreign currency transactions should be converted to the currency in which the institution records its transactions, at the rates of exchange that prevailed on the date of such transaction takes place, cheques received ^{from} foreign resources had been banked and left unaccounted as income until they are realized.

3. Financial and Operating Review3:1 Transactions not supported by Adequate Authority

The following observations are made.

- (a) Since the Director of the Postgraduate Institute of Science of the University of Peradeniya had been appointed as Chairman of the National Science Foundation in addition to his substantive post, remuneration payable to him should be decided with the concurrence of the Treasury. A sum of Rs.273,000 had been paid at Rs.10,000 per month upto 30 September 2000 on the recommendation of the Administrative Secretary of the Foundation and at Rs.11,000 per month from 1 October to 31 December 2000 on the approval of the Director of the Foundation without such a decision.
- (b) In spite of assigning an official vehicle to the Chairman and providing a fuel allowance of Rs.9,000 per month, travelling expenses and mileage amounting to Rs.61,880 and Rs.323,160 respectively had been paid for travelling between the residence and the place of work in the official vehicle.

- (c) Even when the Chairman had been paid travelling expenses and mileage for travelling between the residence in Kandy and the place of work, a house at Narahenpita-Elvitigala Mawatha had also been taken on rent for his residence. House rent amounting to Rs.184,000 had been paid upto 31 December 2000.

When the matters at (a), (b) and (c) were brought to the notice of the Secretary to the Ministry of Industries and Technology on 14 January 2001 he informed me as follows.

- "(a) This appointment had been made by the Hon. Minister and action has been taken to pay half of the allowance for serving in this institution as the Chairman is serving in another institution.
- (b) The Hon.Minister has granted approval for payment of subsistence and mileage to the Chairman for dates of travelling from Peradeniya for duties at the Foundation.
- (c) The Board of Directors had decided Rs.10,000 as monthly rental of the house, which was done with the approval of the Hon. Minister".
- (d) According to Public Enterprises Circular No.95 of 14 June 1994, employees could be paid as allowances only the benefits specifically approved by the Cabinet, Ministry of Public Administration or the Treasury with the approval of the Boards of Control concerned. However, the officers and employees of the Foundation had been paid annual bonus amounting to Rs.874,678, balance medical leave allowances amounting to Rs.663,596 and medical grants amounting to Rs.44,144 during the year under review without specific approval.

- (e) A motor vehicle (official vehicle) valued at Rs.1,275,000 and a mobile telephone valued at Rs.8,900 had been purchased for use of the Chairman utilizing foreign aid funds deviating from objectives of that Project.

Insurance charges amounting to Rs.37,150 and licence fees amounting to Rs.1,400 relating to this vehicle had been paid in the year under review from foreign aid funds deviating from objectives of the Project.

3:2 Identified Losses

- (a) A sum of Rs.8,342 due in respect of library books obtained from the library and not returned from an employee whose services had been terminated in 1990 had not been recovered.
- (b) The Foundation had made no efforts to recover Rs.6,973 due from various institutions and individuals even though a period of over 5 years had elapsed.
- (c) The Foundation had made no efforts during periods ranging from 5 to 12 years to recover Rs.12,168 paid as apprentice allowances from the General Fund of the Foundation to apprentices of the National Apprentice Board for a NAITA Project.
- (d) No efforts had been made to recover balances of research grant project amounting to Rs.31,950 from the respective institutions even though a period of over 5 years had elapsed after completion of project work.
- (e) Deposits amounting to Rs.8,109 made in various institutions for various services could not be recovered in the absence of detailed information even though a period of over 10 years had elapsed after completion of those services

3:3 Idle Assets

- (a) Stocks of audio visual equipment valued at Rs.348,904 purchased from Foreign Aid Funds continue to be kept idling without being used since 1989.
- (b) 41 items of stocks valued at Rs.191,834 had been kept in stores without being used for a period of over 10 years. It was also observed that these stocks had been purchased without regard to the requirements.

3:4 Project Administration

Major deficiencies observed relating to research grant projects are given below.

- (a) Advances had been granted improperly to research officers for project work.
- (b) The Foundation had not taken action over a period of 3 years to recover the balances amounting to Rs.38,952 relating to 7 research projects completed.
- (c) An expenditure of Rs.1,148,651 had been incurred in respect of 10 Projects of which the research work had been abandoned or cancelled due to various reasons.

3:5 Internal Audit

Although an Accountant and 2 officers had been assigned to the Internal Audit Section of the Foundation, internal audit activities had not been implemented.

4. Budgetary Control

Significant variances were observed between the budgeted and the actual income and expenditure thus indicating that the budget had not been made use of during the year under review as an effective instrument of management control.

5. Systems and Controls

Deficiencies observed during the course of audit were brought to the notice of the Chairman of the Foundation by my detailed report in terms of Section 13(7)(a) of the Finance Act.

(S.C. Mayadunne)
Auditor General.

/mt.

Comments on The Auditor General's Final Report on the Accounts of the National Science Foundation for the year ended 31st December 2000.

2:3 Comments on Accounts

2:3:1 Accounting Policies.

Up to 1985 the cost of scientific and laboratory equipment acquired during an year has been treated as expenditure in the respective fund accounts, but capitalized through NARESA fund account at the year end.

In year 1986 the treatment of accounting in capitalization of scientific and documentation assets has been changed. The credit that has been given to NARESA fund up to 1985 for assets purchased for research grants and documentation unit has been omitted and the cost has been directly debited to the relevant asset.

In 1986 we have stated in our notes on accounts this change.

This policy had been consistently applied since 1986.

Accordingly in year 2000 too we have adhered to the same policy as we have been applying since 1986. In our notes on accounts we give a detail movement of all our fund accounts in respect of the relevant year. Hence there is no overstatement in project fund account balances.

(ii) Research Grants

Policy of the National Science Foundation in funding research grants as formulated in the Research Grants Contractual agreement, is to transfer the funds to the Institution where the grantee is employed in installments, and if there is an unused balance of funds with the relevant Institution, after completion of the project, the balance has to be refunded to NSF.

Hence since 1992, we treat the funds transferred to the Institution as expenditure and at the end of the project, if there remains unutilized funds, we create a debtor for that amount. This is done in accordance with the conditions of the Research Grants contractual agreement. Any funds released to grantee's are treated as Cash advances / Cash Imprest and not as expenditure as reported.

We will state this accounting policy in our notes on accounts in the future.

2.3.2 Inappropriate Disclosures in the Accounts

- (i) Written off from our books of accounts in year 2002
- (ii) We have made errors only for the value of Rs 10880/= & not for Rs. 869042/= as stated in the audit Report. Our comments are given below;

(a) Rs. 56,580/=

This is the total value of purchases under Miscellaneous & Accessories Vote in year 2000. We debit the Miscellaneous & Accessories account with items which we cannot classify under office equipment & furniture, Motor vehicles & Documentation Equipment votes. For example it is not possible to debit the motor vehicle vote with the Rs. 575/= being the cost of a torch purchased, as stated in the Audit Report.

(b) Rs. 1350/=

- Error in Posting

(c) Rs. 127,425/ =

- As income from hiring the auditorium is not a main source of income, we account it under sundry income.

(d) Rs. 5,911/-=

- We debit the postage account only with the stamps purchased for posting letters. None of these reported payments are for purchasing stamps. Out of the Rs. 5911/= Rs. 5212/= is courier charges, which our practice is to charge the sundry expenses and Rs. 699/= is payment made to clear a parcel, (clearing charges) which cannot be debited to the postage account.

(e) Rs. 663,597/ =

- Our practice is to debit the salaries and allowances account with the payment for unavailed sick leave.

(f) Rs. 9530/=

- Comment accepted. We have made the necessary entries in year 2001.

(g) Rs.4649/=

- Our entries are correct. This is the cost of repainting filing cabinets and not a purchase of metal cupboard.

Rs. 869,042/=

(iii)

These items have been purchased out of funds received from NAITA for a survey. These items were purchased in 1999. NSF had made the decision in year 2000 to hand it over to NAITA. We

have capitalized these items at the time of purchase in 1999. Once the items are handed over to NAITA, we will make necessary entries in our books of accounts.

2:3:3. Understatements and Overstatements in the Accounts

- (I) Comment accepted. We have made the payment in year 2001
- (II) Comment accepted. Relevant provision will be made in year 2001.

2:3:4 Omission-

We held an Auction to dispose the discarded items in year 2002.

2:3:5 Posting Errors

Though we have not opened separate accounts, we have shown them separately when presenting the Income and Expenditure account

2:3:6 Unreconciled Control Accounts

All our Control Accounts have been reconciled with the subsidiary records. There are no such differences as reported.

2:3:7 Unsettled creditors

Out of the RS. 142,875/= funds received for the Mobile Train Exhibition have been totally utilized during the year 2001. Other funds will be utilized as and when required.

2:3:8 Lack of Evidence for Audit

Following evidences are available to vouch these assests and liabilities

- (i) Sundry Creditors-RS. 17,206/= - We maintain a ledger account in our general ledger, where individual postings are made, since we have very few entries.
- (ii) Sundry Debtors Rs. 888,737/= - We maintain a ledger account where individual postings are made. We also have a register for the invoices raised. At the end of the year we prepare a schedule with all details, this schedule has been given to government Auditors.

- (iii) Staff Debtors-RS. 264,000/= - We maintain a ledger account in our General ledger where individual postings are made as we have very few entries .
- (iv) Deposits Rs.70109/= - We maintain a ledger account with individual postings. We give a schedule (schedule 6) along with our final accounts.
- (v) Fixed assests Rs. 57,810,251/= - We are maintaining fixed assests registers according to Kalamazoo systems since 1983. Also yearly we balance the purchases with the general ledger account and prepare a schedule for the purchases made during the year. Also Board of survey reports are available.
- (vi) Foreign aid ExpenditureRs. 1,017,319/= - We have a separate ledger folio to record these transactions in our foreign aid expenditure grants. ledger, which is a subsidiary ledger. The payment vouchers are available.
- (vii) Stock Rs. . 680938/= - We maintain stores ledgers according to Klamazoo svatem. Goods received notes stores requisition forms are available. Board of survey report is available. A schedule giving the balance stock available at the stores at 31-12 is available.

2:3:9 Non-Compliance with Laws, Rules, Regulations & Management decision.

(a) Finance Act-

- (i) Budget - Budget is prepared according to the format given by the Ministry/General Treasury each year.
- (ii) Internal audit - The reports have been sent on 29.1.2001.

(b) Stamp Duty:

- (i) Stamps - We did not release payments to individuals unless the proper stamp is fixed
- (ii) Loans-Stamps - Action will be taken to affix stamps to the required values in the future.

(c) Financial Regulations

- (i) Though we have not maintained a separate register. We maintain a separate ledger folio in our stores ledger giving all details. Now we have introduced a separate register in addition to the stores ledger folio.
- (ii) Our unused receipt books are kept in the stores, which is a strong room and has security.
- (iii) We have now cancelled these books
- (iv) Action has already been taken to maintain log books from year 2001.

(d) Public enterprises circulars

- (i) The said stenographer was released at the request of the Secretary, Ministry of Science & Technology in 1994. The same Audit query was raised in year 1999, & it was referred to the Ministry but no response was received.
- (ii) Consultant was on a project approved by the Board of management Project is entirely funded by NAITA.

(2) Budget- Budget is prepared according to the formats **needed by the ministry/General Treasury each year.**

(e) Treasury Circulars

We have prepared our accounts in the standard format which we have been preparing since 1987.

(f) Agreements

Relevant officer's matter will be referred to the Attorney General

(g) International Contacts-SAREC/15

Travel grantees are required to submit a report on their return. Those who have not responded are black listed for future travel grants.

Two public seminars were organized by the NSF in Science Education and Medical fields, for the dissemination of knowledge

(h) Sri Lanka accounting Standards

Std 21 – The effects of changes in foreign Exchange rates. In the Standards it is stated that, ‘Sri Lanka Accounting standards are not intended to apply to immaterial items’. We do not deal with foreign currency so as to follow the Standard 21. In the year 2000 we have received only US\$ 1326.00. It is mostly US\$ 80 per subscriber for the Journals. We follow the method of creating a debtor, so that we could identify the subscriber.

3. Financial and Operating Review**3:1 Transactions not supported by adequate Authority**

(a),(b),(c) These payments have been made as noted in the Secretary, Ministry of Science & Technology letter dated 14.01.2000.

(d) Annual Payment

This is paid out of monies received for administration of foreign funded projects on the approval of the Board of Management as an incentive.

Medical assistance scheme

Medical bills for the value or RS.500/= per employee per year is reimbursed. This is paid with the approval of the Board of Management since ,1994.

Encashment of medical leave

Since 1984 NARESHA has been paying its employees for unavalled sick leave according to the basis given in circular No. 326 of 23-11-83 of the then Ministry of Industries and Scientific affairs on the approval of the Board of Management.

(e) The mobile phone was purchased out of consolidated funds and not from Foreign Aid funds as reported . (ref. Voucher No. G/98- 16.02.99) .

This vehicle was purchased with the approval of SIDA /SAREC for the Institution.

Insurance and Revenue fees- This was included as the part of the initial cost of the vehicle.

3:2 Identified Losses

(a) Staff Debtors- The relevant employee was discontinued on disciplinary grounds. Action will be taken to write off the RS.8,432/= from our Book of Accounts, since it cannot be recovered.

(b) RS. 6,973/= We have recovered RS. 2,875/= in year 2001 (Ref. receipt No. 16042). Action will be taken to recover the balance.

(c) RS. 12,168/- We have written to NAITA , they are requesting for the original papers, which we have already submitted to them, at the time we have made the payment during past year.

(d) We have to recover only RS. 25,082/= and not RS. 31,950/= as reported. We have written to them, RS. 4508/53 have been settled during year 2001 & year 2002.

(e) These are irrecoverable. We will take action to write off.

3:3 Idle Assets

(a) The officer who handled the equipment was discontinued on disciplinary grounds. These items are unserviceable. Action will be taken to write off.

(b) Comment incorrect. We do not have such a stock at stores.

3:4 Project Administrations

(a) The grant numbers reported are grants for which we have transferred the funds to University of Peradeniya, where the research is carried out. We expect the relevant institutions to disburse funds according to prevailing financial regulations. We have written ref. the Audit query to the University of Peradeniya.

(b) This RS. 38,952/= has been refunded in year 2001.

(c) Cancellation & Termination of Projects

Grants are terminated on the recommendation of the relevant working committee. The Committee recommends the termination after considering all facts forwarded by the grantee. However if NSF or the committee finds that the grantee's conduct is not good or there is misuse of funds action is taken against the grantee. The funds incurred before termination is considered legitimate expenses on the project.

3:5 Internal audit

Internal Audit work has been carried out and reports have been submitted to Auditor General.

4. Budgetary Control

We use the budget as an instrument of management control. But variances are unavoidable.

5. Systems and Controls

Auditor General's comments on section 13(7) (a) of the finance act received our attention. Our reply to these comments were forwarded to the Auditor General on 21.12.01.