NATIONAL SCIENCE FOUNDATION

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# Corporate Plan

# 2009-2013

www.nsf.ac.lk



National Science Foundation
47/5, Maitland Place
Colombo 07
Sri Lanka

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# Introduction

*"Research is the foundation of knowledge"*

This is not only the motto of the National Science Foundation (NSF) – and of its predecessors, the Natural Resources, Energy and Science Authority of Sri Lanka (NARESA) and the National Science Council (NSC) – it is also the main function of the NSF. To this end, the NSF is committed to generating knowledge, disseminating and transferring knowledge and, more importantly, to ensuring the effective utilisation of knowledge, for the greater benefit of the people of Sri Lanka. The Foundation supports, and embraces, research in all fields of fundamental and applied sciences as well as in the social sciences. In this context, NSF's vision, mission and objectives are as follows:

# Vision, Mission

## Vision

To be the premier driving force in science and technology leading to competitive advantage and the rapid advancement of the nation, for the welfare of the people.

## Mission

To promote research, development and innovation to create a knowledge-based economy by building public-private, institution-industry partnerships

To facilitate capacity building, infrastructure development, technology transfer, knowledge creation and sharing in all fields of science and technology to improve the quality of life of our people

To achieve our goals by nurturing a competent workforce in a conducive work environment which is performance driven and results oriented

# Objectives

In keeping with its vision and mission, the NSF's objectives and functions are:

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

# Principles

The NSF abides by the following two principles:

Universality of Science:

The NSF observes and upholds the freedom of scientists, as individuals, to communicate and associate with other scientists, globally, in the furtherance of their science without discrimination on grounds other than scientific merit. Furthermore, in pursuing its objectives in respect of the rights and responsibilities of scientists, the NSF opposes any discrimination based on age, ethnic origin, gender, language, physical disability, political stance, and religion. NSF shall not accept disruption of its own activities by statements or actions that intentionally or otherwise prevent the application of this principle.

Freedom in the Pursuit of Science:

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

# Resources

## Land and buildings

The Secretariat of NSF is a three-storeyed building and a two- storeyed annex with a total floor area of 4,100 sq. metres, and located amidst a number of other scientific organisations in Maitland Place, Colombo 07. There is adequate space for parking and garages.

The ground floor houses the National Science Library and Resource Centre (NSLRC), the auditorium, the information technology unit with the web-servers and the printing unit, while the first floor accommodates the Office of the Director; the International Liaison, Research, Science Popularisation and the Technology Divisions; and the Board Room. The Administration and Finance Division, and the Journals Office are on the second floor. The Office of the Chairperson, the Science and Technology Policy Research Division, a meeting / seminar room and a consultant's office are housed in the annex.

As part of NSF's 40th anniversary celebrations, the Board of Management decided to renovate and refurbish the building to provide better facilities to its stake holders. Accordingly, work on the first and second floors have been completed and phase II will commence in 2009 provided funds are available for the proposed renovation work.

The Secretariat is now provided with access to wireless technology, wi-fi (wireless fidelity), throughout the building; and the two computer servers are accommodated in a refurbished room. The ground floor, of the main building, is presently under renovation to provide an enlarged lobby and reception area. The boardroom is provided with video conferencing and multimedia facilities. Plans are being finalised to construct a canteen and the NSF bookshop within the premises, but with direct access from the road to the public.

A specially designated "scientists area" will enable NSF's partners and stakeholders, when visiting the Secretariat, to interact in an informal and collegiate environment, conducive to intellectual debate and thought.

## Production and operating facilities

The National Science Foundation, which is essentially a service organisation, mandated to serve and strengthen the science and technology sectors in Sri Lanka, performs its tasks in accordance with the functions set out in the NSF Act of Incorporation (Act no 11 of 1994). The NSF is the hub of an extended S & T network and is one of key state organisations charged with promoting science and technology education at all levels, and in all settings, from kindergarten through career development. The Foundation brings different segments of the S & T community together through workshops, seminars, committees, panel reviews and several other interactions. These collaborations provide benchmarks, leadership and new frontiers for research and education. NSF also fosters strategic collaborations with key national and global counterparts that address national and international science and technology priorities. Furthermore, NSF provides both information and support to the national policy making bodies in the areas of science and technology.

As a state organisation, and the leading institution, for supporting research-based science and technology activities in the country, NSF bears a great responsibility for building a science culture for future development. By carrying out its activities to the fullest, NSF strives to be a robust partner in national development.

The NSF is governed by a Board of Management, which consists of the Chairperson; the Director; a member each representing the University Grants Commission, the Sri Lanka Association for the Advancement of Science, the Institute of Engineers of Sri Lanka, the National Institute of Education, and the Ministry of Finance; and four members appointed by the Honourable Minister for Science and Technology. The Director functions as the Chief Executive Officer of the Foundation which has five scientific divisions – International Liaison, Research, Science Popularisation, Science and Technology Policy Research, Technology - and the National Science Library and Resource Centre.

Three Principle Scientific Officers, two Senior Scientific Officers and a Principle Information Officer head the five scientific Divisions and the NSLRC respectively. The Administration and Finance Division is responsible for the general administration and financial functions of the Foundation. Scientific Officers and support staff assist in the scientific and associated functions of the Divisions. The staff of the respective Units handle internal audit, printing and information technology. Research Assistants and Consultants are hired on a needs-basis to carry out specialised tasks and assignments as required by the Board of Management.

The NSF functions through an extensive system of expert committees which constitute the main advisory arm of the Foundation. These committees not only recommend and advice on research grants, they also advise on policies and priorities for research in the respective fields. Committee members are much sought after and valued for scientific input and advice by the Board and the Secretariat alike. Although they are not always visible, they are both the engine and the sounding board of the NSF. Appointments to committees are done on a rigorous basis, to ensure both quality and wide representation, and after many consultations where Vice-Chancellors, Deans, Directors of Research Institutions, Directors / Heads of Public Corporations and Departments are consulted for nominations.

These are then vetted by the Board of Management who subsequently appoints members for a renewable two-year term. Additionally, an Advisory Board to each Division, chaired by a member of the Board of Management, advises on matters of policy and expenditure. All substantive decisions are by the Board of Management. The lists of committees are given under the respective Division which they advise.

During 2008, the National Science Foundation (NSF), together with its two predecessors - the Natural Resources, Energy and Science Authority (NARESA) and the National Science Council (NSC) - celebrated 40 years of active contribution to the advancement of research in science. The National Science Council commenced activities by awarding research grants in 1970; the NSF now supports industrial research and development, recognising them as major forces that drive both science and the economy. In keeping with recent advances in science, the Foundation, together with the Ministry of Science and Technology, initiated and now leads the National Nanotechnology Initiative (NNI) to infuse nanotechnology into local industries such as telecommunication, apparels, rubber and the agro-based industries.

## *International Liaison Division*

Partner in science across the seas

The Division coordinates NSF's international activities aimed at capacity building by ensuring scientists have access to international scientific fora, where they have presented numerous research papers, and by hosting several international conferences thereby enabling a wider group of local scientists to interact with their international counterparts. The Overseas Special Training Programme (OSTP), which specifically targets training programmes at internationally recognised institutions, ensures that scientists and technical personnel are kept up-to-date on scientific advances and laboratory techniques. Additionally, the International Partnerships for Science and Technology (IPSAT) facilitates research scientists, and who are resident abroad, to spend a stipulated period in Sri Lanka engaged in supporting and strengthening ongoing research programmes.

The Foundation is the national focal point for several intergovernmental / multilateral initiatives, including the "science" component of UNESCO's programmes, the notable being UNESCO's Man and the Biosphere Programme (MAB) which supports research on conservation and sustenance, and development of environmentally threatened areas across the country. During the recent past, NSF developed and sustained the Sinharaja Natural Reserve, Bundala National Park, and the Kanneliya-Dediyagala-Nakiyadeniya through its MAB Programme. UNESCO subsequently designated Sinharaja as a world heritage site and recognised the other two as International Man and Biosphere Reserves. The Foundation is committed to upholding UNESCO's international principles and standards on ethics in science and scientific research; to this end the International Liaison Division supports workshops for school teachers and university faculty on teaching bioethics to their respective students.

The Division coordinates the work of the following committees: National Man and Biosphere committee, national committee for LOICZ (Land Ocean Interactions in the Coastal Zone), National ICSU committee (International Council of Scientific Unions), and the National Bioethics committee.

## *Research Division*

Research is the foundation of knowledge

The major activity of awarding research grants for scientific investigations continues to be the focus of NSF, with resources drawn mainly from Treasury funds. These grants provide assistance to supplement the financial, physical and manpower resources available for scientific research in the scientist's home institution. Grants are disbursed in all fields of science and technology[1] after a competitive evaluation by the NSF's numerous research committees. Over the years, the three successive institutions have funded over 1860 research grants.

Recognising and supporting young scientists is a major focus area and the NSF has funded over 300 post-graduate degrees in all fields of science since its inception. Research scientists, with sound research proposals are eligible to apply. Furthermore, NSF supports research scientists with a limited stipend and it honours outstanding senior scientists with NSF Fellowships. The Coordinated Thematic Research Programme (CTRP), initiated recently, is based on a collaborative, multidisciplinary, research perspective.

Through this programme, NSF expects to re-orient and drive the national research system to produce well-defined outputs that will directly contribute towards the economic and social welfare of the country.

The Foundation gives priority to development-oriented research programmes, particularly those with public-private partnerships. Grants for equipment and spare parts complete the Research Division's present portfolio of grants.

As recommended in the previous corporate plan, the Division initiated the research Scholarship and research Fellowship programmes, thereby enabling young and senior researchers respectively, to engage in full time research; and strengthened infrastructure facilities in laboratories by providing funding for research equipment and spare parts for equipments.

The NSF awards for scientific excellence recognise recipients of NSF research grants for their excellence in research and for their contributions to the advancement of science. The Division regularly organises seminars, workshops and training programmes – to share experiences and recent developments, maintain a scientific dialogue and to disseminate information on science and technology. During the preceding three years, the Division conducted a total of 38 such events.

The Research Division coordinates three categories of committees which are given below, with their specific committees:

(i) National Committees: biotechnology, hydrology, basic sciences, marine sciences and oceanography, social sciences, and quality assurance in research.
(ii) Research Committees: agriculture and food sciences, engineering sciences, environment and biodiversity, and health sciences.

1 health sciences, agriculture and food sciences, engineering sciences, science education , water and energy, environment and biodiversity, biotechnology fundamental sciences technology development and promotion , disaster mitigation and management and social sciences

(iii) Thematic Committees : alternative agriculture for self reliance, sustainable utilisation of natural resources, disaster management and mitigation, environment protection and sustainable development, non-communicable diseases, quality assurance for consumer protection

The Division recently published a document entitled "Towards promoting the development of biotechnology industries in Sri Lanka", just completed the National Biotechnology Policy; and successfully trained secondary-level school teachers on project based learning of science.

## *Science Popularisation Division*

Science for all

While NSF's programme on the popularisation of science continues to focus on three main groups - schoolchildren, the scientific community and the public - it is especially committed to encouraging and nurturing science and scientific literacy among schoolchildren. To this end, it actively supports school-science societies nationwide, publishes a science magazine targeted at the 14-18 age group, airs TV programmes on science and technology for the public, publishes monographs on science, facilitates popular science lectures and conducts annual science programmes for children of all ages. School children receive awards for annual competitions in science-based drama, posters and on oration; the best science teacher is awarded annually and a national award is given on a programme to popularise science.

A total of 350 school science societies are now registered with NSF, which represents 75% of the national coverage and over a 80% increase since the previous corporate plan (which recommended a 10 % increase). Scientists and resource persons deliver lectures at registered schools, the NSF supports S&T related workshops at registered schools, and the students are entitled to participate in NSF's annual schools' competitions.

Recognising the importance of effective science communication, the Division conducts training programmes and workshops for scientists throughout the country; and it recently hosted an International Workshop on Science Journalism and Communication in Colombo.

## *Science and Technology Policy Research Division*

Science indicators for policy development

Given that reliable statistical data are invaluable to the scientific advancement of any nation, NSF developed and maintains a national database on science and technology management information systems (STMIS). This national database of scientists, researchers, R&D institutions, S&T manpower, R&D expenditure, and research conducted in the country, provides an on-line registration facility. STMIS also sheds light on how the government's socio-economic investments impact (positively and/or negatively) on science and technology and related areas.

This powerful tool enables on-line searches for advanced scientific equipment which are available in the major S&T institutions, research conducted in the country, S&T training courses nation-wide, technologies developed and available in the different sectors, S&T professional associations and societies established, scientific research journals published in the country and R&D funding agencies/sources available in Sri Lanka.

The Division has been regularly conducting tracer surveys since 1998, which are published as "S&T Graduates (Science, Engineering, and Agriculture) of Sri Lankan Universities"; a national research and development survey was published as the "Sri Lanka Science and Technology Statistical Handbook", along with it the "National Research and Development Survey of Sri Lanka, 2004". Analyses on a survey of over 200 expatriate scientists resulted in a press article in Sinhala, and a short communication, in English, was submitted recently for publication.

## *Technology Division*

Technology for development

Acknowledging that the application of scientific knowledge for practical purposes is important for national development, the newly established Technology Division aims to foster innovation towards sustainable development. The Division facilitates technology development and promotion, at the grass roots level, by disbursing grants for: research into technology development, scaling up projects, industrial research and development, start up businesses, and technologies for rural sector development. The Division also conducts programmes on intellectual property awareness and education.

A patents desk provides search facilities on patents, for would-be clients, and provides advice on financing issues. The technological information and dissemination desk publishes Techwatch Lanka, a quarterly newsletter, and the technology databank responds to industry / technology related queries. Recent Divisional surveys include one on commercialisation of inventions and rural entrepreneurship and a case study on industry-institute partnerships.

Despite attempts at establishing venture capital facilities and programmes to support industry support, neither has materialised so far. The annual NSF awards for scientific achievements and inventions, coordinated by the Division, are prestigious recognitions for their recipients, many of whom have subsequently received international awards and patents.

## Human resources and management

The Secretariat is presently facing severe constraints due to its inability to recruit the approved number of staff i.e. cadre positions. This stems from a Treasury directive to halt all recruitments, despite vacancies. Thus, the Secretariat presently functions with only 65% of its approved number of professional level staff and 72% of its support staff. It is disappointing that the approved level of funding provides for a greater percentage of the support staff than of the professional staff to be recruited to the NSF.

Out of the 26 scientific officers at NSF, 7 hold doctorates and 9 are qualified at the masters level. The ratio of professional staff to support staff shows a positive change from 1:0.23 in 2001 to 1:0.7 in 2008.

**Our Human Resource Base – as of 30 December 2008**

| Designation | Approved no. of Posts | Positions filled |
|---|---|---|
| Chairman | 01 | 01 |
| Director | 01 | 01 |
| Confidential Secretary | 02 | 02 |
| Scientific Officer | 40 | 26 |
| Information Officer | 06 | 06 |
| Admin. Officer | 01 | 01 |
| Asst. Admin. Officer | 01 | 01 |
| Accountant | 03 | 02 |
| Librarian | 02 | - |
| Printing Manager | 01 | 01 |
| Admin. Assistant | 01 | 01 |
| Internal Auditor | 01 | 01 |
| Accounting Assistant | 02 | 02 |
| Network Administrator | 01 | 01 |
| Human Resource Assistant | 02 | - |
| Electric/Electronic Technician | 01 | - |
| Steno Typist | 18 | 17 |
| Computer Application Assistant | 02 | 02 |
| Clerk Typist | 09 | 04 |
| Book Keeper | 02 | - |
| Accounts Clerk | 12 | 09 |
| Audit Clerk | 02 | 02 |
| Store Keeper | 01 | - |
| Asst. Store Keeper | 01 | 01 |
| Library Assistant | 03 | 02 |
| Telephone Operator/ Receptionist | 02 | 01 |
| Micro Photographer/Audio Operator | 01 | - |
| Litho Operator | 02 | 01 |
| Camera Operator/Plate Maker | 02 | 02 |
| Litho Artist | 02 | 02 |
| Machine Operator | 02 | 01 |
| Book Binder | 02 | 02 |
| KKS | 05 | 05 |
| Driver | 09 | 07 |
| Library Attendant | 01 | 01 |
| Printing Attendant | 01 | 01 |
| Officer Labourer | 10 | 03 |
| Cycle Orderly/Messenger | 02 | 01 |

## Technical know-how

### *National Science Library and Resource Centre (NSLRC)*

The National Science Library and Resource Centre, formerly known as the NSF Library, was the first to digitise library material in Sri Lanka and is the national focal point for the dissemination of science and technology information in the country. Its website links science and technology related information and organisations in the country and offers a platform for efficient exchange of information. The NSLRC maintains the national collection of scientific and technological literature which provides the local scientific community access to literature on past as well as current research conducted in the country.

The Sri Lanka Science Index database, accessible through the NSLRC website, provides an efficient tool for searching the collection on-line; and the NSLRC website offers a central gateway to a broad range of national and international databases with powerful and flexible search capabilities. Not only does it offer a common platform for scientists to upload their scientific work to a central, open archive of national literature, it also enables them to deposit their work - periodicals, articles, conference papers, reports, theses, books, manuals, CDs – on to desktops for on-line view by their counterparts. Additionally, the NSLRC provides a gateway to international sets of abstracts, periodicals and complete texts.

The NSLRC is the national focal point for UNESCO's science and technology related information network. Thus, it distributes, as well as conducts training programmes on, CDS/ISIS - UNESCO's library management software package. NSLRC also conducts other training programmes, for librarians throughout the country, on library software for the development and maintenance of databases and digital libraries in network environments. The NSLRC's seminar series aim at keeping librarians abreast of the latest trends and developments in information technology.

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

Established in 1973 this quarterly Journal publishes research articles, feature articles, general articles, opinions, review articles, short communications, research notes, commentaries and notes, research news and news.

This is the only scientific journal in Sri Lanka which is covered by the Thomson Reuters' Science Citation Index Expanded. It is also included in the Master List of Journals of Thomson Reuters since 2006. Additionally, JNSF appears in the Journal Citation Reports/Science Edition, Biological Abstracts, BIOSIS Previews, Zoological Record and the SCOPUS database maintained by Elsevier.

The Journal made a rare and historic appearance in the Science Citation Index Expanded, a premier online database which provides bibliographic and citation information from over 6,650 of the world's leading scientific and technical journals across 150 disciplines. This historic accomplishment for JNSF to be cited in one of the world's prestigious bibliographic and citation information data bases is first of its kind for any science and technology publication in Sri Lanka.

## *Printing unit*

The Printing Unit meets the printing requirements of the Foundation, and occasionally those of the Ministry of Science and Technology as well. While this unit can function as a quasi-commercial venture, it presently lacks the appropriate equipment and trained man-power to do so. Future development plans must include upgrading the machinery to meet the NSF's increasing demand and to enable the printing unit to function as an income generating activity for the NSF.

### *Information Technology unit*

This unit serves the NSF Secretariat with internet facilities, web hosting facilities, database hosting facilities and e-mail facilities. Additionally, the unit provides services at conferences sponsored by NSF, both in-house and externally. While this unit provides the bare minimum, it must be upgraded to improve the existing infrastructure facilities, such as upgrading the internet bandwidth; upgrading /replacing all personal computers and printers with modern versions to facilitate NSF's growing demand; and strengthening the backup facilities for the NSF servers.

## Markets and suppliers

The Foundation's "markets and suppliers" are those organisations and institutions which recognise and work through NSF to strengthen their programmes and mandates in the region in general and in Sri Lanka in particular.

UNESCO recognises NSF as its focal point for all its science-related programmes and activities in the country; the most notable of which is the Man and the Biosphere (MAB) programme. This actively supports interdisciplinary research and facilitates the nomination of biosphere reserves to the world network of biosphere reserves and world heritage sites.

NSF is the south Asian regional node for the programme on Land Ocean Interactions in the Coastal Zones (LOICZ) which is part of the International Geosphere - Biosphere Programmes (IGBP). The Foundation coordinates and promotes research within the coastal zone at the regional and local levels, and facilitates links and exchanges between international and national policy makers.

As the focal point for the (Trieste-based) Third World Academy of Sciences (TWAS), NSF administers the annual Young Scientists TWAS awards in Sri Lanka for outstanding research in science and technology. The Foundation will hold the Chair for the Science and Technology Policy Asian Network (STEPAN), commencing 2009 for a period of three years.

## Finance

The Foundation's consolidated capital and recurrent expenditure for 2008 and estimated budget for 2008 are given below.

**Approved Budget for years 2008 and 2009.**

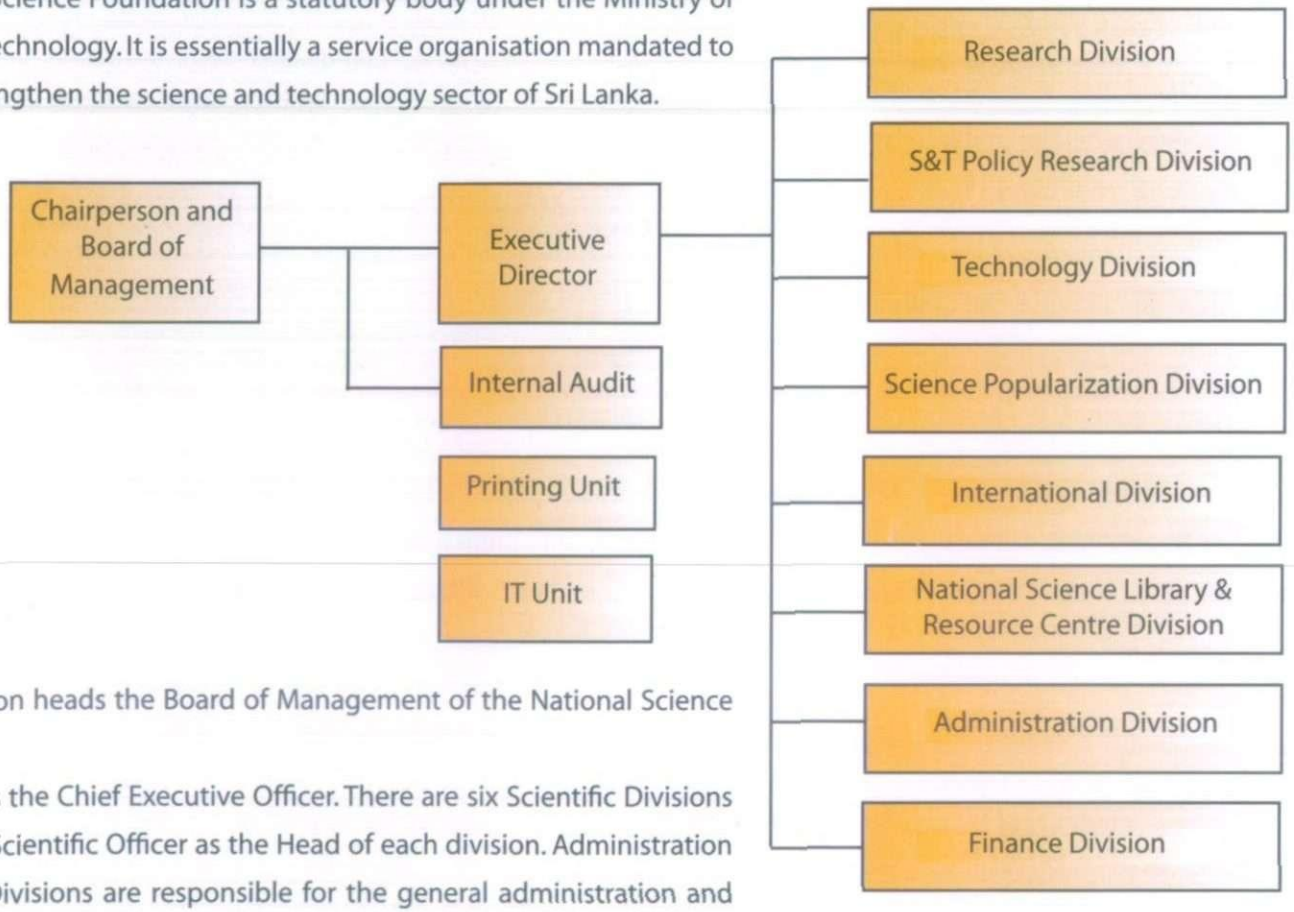
| | Consolidated Fund | Year 2008 (Rs. Mn.) | Year 2009 (Rs. Mn.) |
|---|---|---|---|
| 1 | Grants for Research & Other Scientific Work | 130.2 | 82,000 |
| 2 | Science & Technology Policy Research | 9.3 | 8,500 |
| 3 | Technology Promotion | 18.26 | 10,000 |
| 4 | National Science Library & Resource Centre | 5.22 | 8,500 |
| 5 | Popularisation of Science | 20.46 | 23,500 |
| 6 | International Liaison Division/Contacts Fund | 25.8 | 24,000 |
| 7 | Information Technology | 3.72 | - |
| 8 | Printing Unit | 3.2 | - |
| 9 | Office Furniture fittings & equipment | 4.65 | 9,000 |
| 10 | Rehabilitation of Capital Assets | 1.2 | - |
| 11 | Land & Building (renovations etc.) | 45.4 | 4,000 |
| 12 | Vehicle | 4.5 | 5,000 |
| 13 | Directors Vote for Workshops, Seminars, Conferences etc. | 25.69 | 10,000 |
| | | | |
| | **Total Consolidated Funds** | **297.6** | |
| | **Foreign Aid – SIDA funds** | - | |
| | **Total Capital** | **297.6** | |
| | | | |
| | **Recurrent Expenditure - estimate** | **77.552** | |

The forecasted financial plan, 2009 – 2013, is given below (Rs. Mn.)

| Description | 2008 (actual) | 2009 (allocation) | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| **Income** | | | | | | |
| (i) Treasury | | | | | | |
| (a) Recurrent | 69.3 | 89.46 | 109.30 | 120.2 | 132.2 | |
| (b) Capital | 160.0 | 217.6 | 1,306 | 1,350 | 1,485 | |
| (ii) Other grants | APN USD 52,000 | | | | | |
| (iii) NSF revenue | 1.35 | 1.4 | 1,450 | 1.5 | 1.550 | |
| **Total income** | 230.65 | 388.46 | 1,416 | 1,471 | 1,618 | |

# Organisational structure

The National Science Foundation is a statutory body under the Ministry of Science and Technology. It is essentially a service organisation mandated to serve and strengthen the science and technology sector of Sri Lanka.




The Chairperson heads the Board of Management of the National Science Foundation.

The Director is the Chief Executive Officer. There are six Scientific Divisions with a senior Scientific Officer as the Head of each division. Administration and Finance Divisions are responsible for the general administration and financial affairs of the Foundation. Scientific Officers and other support staff assist the Heads of Divisions in Scientific and associated functions. Internal audit, printing and information technology are handled by the staff of the respective Units. Research Assistants and Consultants hired on need-basis carry out specialized tasks and assignments as required by the Board of Management.

# Strengths and weaknesses

The strengths and weaknesses and the opportunities and threats are summarised in the SWOT analysis below.

## Strengths

1. Direct Ministerial support with a mandate established by an Act of Parliament (Act no 11 of 1994)
2. regarded locally and abroad, as a well established research funding organization
3. recognised among local and international scientific community as a platform for scientific debates, networking, communication and scientific interactions
4. experienced and qualified staff
5. authorised to obtain funds from local or foreign donors for mandatory activities
6. mandated, and able to obtain, substantive inputs from, a range of high calibre professionals including the state sector, scientific community, academia, policy planners, industrialists, private sector entrepreneurs, bankers and financiers
7. ability to muster support from, and strategically network with, academic, research and professional communities at national and international levels
8. recognised and sought after by the private sector
9. strong synergistic relationship with schools, science educators, public at large across the country in disseminating science information and in reaching the un-reached
10. forty years of experience in networking and communication
11. established reputation in evaluating and monitoring research grants
12. incentives and rewards scheme for recognising scientific and technological achievements
13. strong support and commitment from expatriate scientific community
14. National Science Library and Resource Centre is well recognised
15. in-house printing facilities for publications .
16. publishes two journals – the Journal of the National Science Foundation and the Journal of Social Sciences – the former was internationally cited in 2008

## Weaknesses

1. inability to exercise certain powers prescribed in Act (no 11 of 1994)
2. government budgetary allocations not released totally, nor at regular agreed-upon intervals
3. unable to retain funds generated by institute and to utilise them for approved programmes/projects

4. absence of a quality management system
5. inadequate opportunities for human resource development and management
6. absence of adequate opportunities for appropriate training and re-training of staff
7. inadequate remuneration, resulting in high staff turn-over rate
8. inadequate infrastructure facilities
9. constraints on building space and physical structure, e.g lack of space for meetings
10. inadequate transport facilities for NSF activities

## Opportunities

1. a Cabinet Minister for S&T
2. relevance / importance of S&T for economic development.
3. availability of unexploited natural resources for research activities
4. opportunities to address national needs through thematic approach
5. opportunity to popularise science at all levels
6. opportunities to link with similar organisations globally
7. potential to explore foreign sources for funding
8. opportunities to promote industrial research in state and private sector R&D institutions

## Threats

1. declining interest in studying science at all levels
2. absence of critical mass of R&D personnel
3. political instability/unrest resulting in low attention given to R &D
4. uncertainties in treasury allocations for research and development, leading to poor credibility of NSF in research funding
5. lack of / poor interest regarding work carried out by NSF amongst certain key stakeholders (e.g. Treasury)
6. Increasing opportunities in non S&T related fields for employment
7. brain drain
8. duplication of agencies for distribution of scientific and research funds which were mandated for NSF since inception
9. weak research culture in the country

## Constraints

The major constraints faced by NSF continue to be (i) many key programmes (e.g. funding for research grants, support for equipment and spare parts, travel grants, scholarships and fellowships) had to be cancelled or placed "on hold" due to restricted and irregular funding by the Treasury; (ii) the NSF is unable to retain funds which it generates and to utilise them for approved programmes; (iii) there is a lack of interest/lack of awareness regarding the work carried out by the NSF amongst certain key stake holders (e.g. Treasury); (iv) a high staff turn-over rate, due to inadequate remuneration and; (v) the inability to exercise powers prescribed in its Act of incorporation.

Almost all of these can be addressed, and reversed, if the NSF receives its full share of the approved funds. Withholding funds has proved to be counter-productive (staff are frustrated due to both slow progress in approved programmes and inadequate remuneration and benefits, leading to a high turn-over). Furthermore, a Board approved public relations and marketing strategy commenced well but, due to with-holding of funds, its planned activities have been curtailed and progress slowed down. This too could have a negative impact on the NSF's image.

# Review of the preceding three years

Awarding research grants for scientific investigations continues to be the Foundation's focus, with resources from the Treasury. The beneficiaries of such grants were basically those in academia and research institutes. Despite several attempts at inducing public-private partnerships, for research proposals, the outcome so far has been disappointing. A brief analysis of grants sponsored by NSF during the preceding three years indicates that the Foundation supported 183 research grants and awarded 77 research scholarships. However, it is worth noting that, due to delays in receiving the voted expenditure during the preceding three years, 10-12 % of the approved research proposals had to be deferred due to lack of funds; the situation is further compounded by NSF's inability to fund research students since the third quarter of 2008.

As recommended in the previous corporate plan, the Division initiated the research Scholarship and research Fellowship programmes, thereby enabling young and senior researchers respectively, to engage in full time research; and strengthened infrastructure facilities in laboratories by providing funding for research equipment and spare parts for equipments.

A conscious effort at broadening the scientific and technical fields for research grants resulted in novel proposals in areas such as science education, water and energy, environment and biodiversity, biotechnology, technology development and promotion, and in disaster mitigation and management.

An encouraging outcome is the number of publications arising from NSF sponsored research - 70 international publications, 44 local publications and 182 communications, in addition to 4 theses - during the preceding three years.

The Foundation recorded an increase in the number of research students (122) it supported towards PhDs or M.Phils, again a positive trend as this contributes towards strengthening the university system in both awarding and in supervising research degrees. A recent NSF proposal to support split programmes for research degrees received strong support from students and faculty alike. All these contribute towards capacity building of the university system in general and that of the research potential in particular.

As recommended in the previous corporate plan, NSF introduced the concepts of national committees and of multidisciplinary research projects to address pressing national issues. The latter evolved into the coordinated thematic research programme (CTRP) based on a collaborative, multidisciplinary, research perspective – involving a wide cross-section from academia, research institutions and the public sector, nation-wide.

The Foundation approved 15 such grants, all of which run from 2-3 years, none was due to be completed during this reporting period.

In keeping pace with analogous institutions worldwide, the Foundation prepared the National Biotechnology Policy and commenced work on a National R & D policy for the promotion of scientific research. Both these were conducted in a participatory approach involving a wide cross section of academia, research institutions and the public sector. As recommended in the previous corporate plan, NSF initiated the research scholarship and research fellowship programmes and strengthened infrastructure facilities of laboratories by supporting the purchase of research equipment and spare parts.

The Foundation's Man and Biosphere sub-committee comprises of an interdisciplinary team of nationally recognised experts who continue to oversee research in the development and sustenance of our natural reserves. Their dedication and hard work earned UNESCO's commendation by recognising the Bundala National Park and the Kanneliya-Dediyagala-Nakiyadeniya as UNESCO International Man and Biosphere Reserves.

In complying with international principles and standards on ethics in science and scientific research, the NSF introduced numerous school teachers and university faculty, island-wide, to bioethics and on teaching it to their respective students.

During the past three years NSF superseded all previous records by recording a 120 % increase in supporting the participation of Lankan scientists and technologists at international fora, and enabled a much wider group of local scientists to interact with their international counterparts by hosting several international conferences and workshops in Sri Lanka.

Over 320 school science societies are now registered with NSF's programme, surpassing the 10% planned increase in the previous corporate plan. As recommended in the previous Corporate Plan, the Foundation published several science and technology related monographs for school children, and produced and aired TV documentaries for children of all ages.

The Foundation recorded a 65% increase in STMIS registrations, of scientists and technologists, since 2005 (cf. previous corporate plan, of 2005, recommended an annual increase of 10%); a national research and development survey, published as the "Sri Lanka Science and Technology Statistical Handbook", and its companion the "National Research and Development Survey of Sri Lanka, 2004", received international acclaim.

The Journal of the National Science Foundation of Sri Lanka, made a rare and historic appearance in the Science Citation Index Expanded, a premier online database which provides bibliographic and citation information from over 6,650 of the world's leading scientific and technical journals across 150 disciplines. This historic accomplishment for JNSF to be cited in one of the world's prestigious bibliographic and citation information data bases is the first of its kind for any science and technology publication in Sri Lanka.

The National Science Library and Resource Centre recently completed its digitisation programme of all local science and technology related documents housed in the Centre. These documents can be accessed through the NSF's website.

The recently introduced annual NSF awards for scientific achievements and inventions are prestigious recognitions for their recipients, many of whom have subsequently received international awards and patents. However, the Foundation failed to meet any increases in applications for patent support, resulting from NSF sponsored grants.

The IT Unit is severely handicapped by lack of staff and has not been able to develop an interactive website or e-learning platforms, both of which were recommended in the previous corporate plan.

Although the previous Plan recommended a 10 % increase in external printing contracts, the Foundation failed to meet this target due to inadequate facilities for printing.

As recommended in the previous corporate plan, a performance management system was introduced in mid-2008 midst severe resistance from the Secretariat staff. While the "forms" are due to be completed at the beginning of 2009, it remains to be seen whether this would materialise. The recommended performance based rewards structure and employee motivation and rewards scheme are on hold due to financial constraints.

NSF launched a brand building campaign, i.e. a marketing strategy, in mid-2008 which is still ongoing. While it is too early to assess the benefits, some positive outcomes include the new logo which unanimously received accolades both nationally and internationally, and the press and radio "advertisements" which noticeably raised public awareness of the NSF.

# Strategic plans for the period 2009 – 2013

The strategic plans, derived from the goals and objectives, which are described in this section provide the road map and the overarching principles which will guide NSF towards the year 2013. Each strategic plan will be achieved through a set of action plans and will be measured against performance indicators with actual outcomes as the final measure. The underlying assumption is that the other provisions, such as financial and human resources, will be in place in order to achieve the targets on schedule.

The NSF provides a service function to, and derives benefit from, an often invisible but highly valuable and diverse college of researchers, academics, industry, the school system, other professionals and the general public.

Through the strategic plan, in the following section, there is adequate scope to monitor and evaluate, or to make a quick appraisal of the progress of, work in the organisation at any given time.

In the ensuing years, NSF will :

- endeavour to strike a sustainable balance between fundamental scientific research and applied scientific research aimed at addressing development constraints and issues
- support research directed at enhancing and adding value to naturally occurring resources, thus contributing towards economic development
- promote international research collaborations, technology transfer, and obtain expertise towards developing a robust and globally-engaged research and scientific community in Sri Lanka
- ensure new and emerging technologies, such as biotechnology and nanotechnology, are infused as much as possible into the national research system
- ensure that science and science education will be accessible to all, especially those in the rural sector
- support the national nanotechnology initiative by strengthening research collaborations, training as well as re-training local scientists and encouraging public-private partnerships in nanotechnology-related industries
- ensure quality assurance in scientific research is institutionalised into all the publicly funded research facilities in the country
- do its utmost to demonstrate that research is the foundation for knowledge, for advancing knowledge as well as for national develop-ment

## Future direction

In relation to frontier-science research, NSF will ensure greater involvement of experts and scientists of distinction in identifying specific issues of national importance and subsequent research sponsorship. If necessary, such research issues will be contracted through bids to recognised research groups. In other words, NSF will make a concerted effort to widen the scope of commissioned research in high priority areas, or where situations of exigencies exist.

The Foundation aims at strengthening national research capacities at both the individual and institutional levels. This will be achieved through several strategic pathways. The NSF will primarily mobilise local and foreign assistance to build a strong human-resource capability, which can undertake frontier-level research in NSF's identified thrust areas (i.e. nanotechnology, biotechnology, marine sciences). Additionally, NSF will continue to identify specific science and technology issues that will directly benefit national development.

The NSF recognises that the current approach for evaluation and monitoring of innovation-based research in the industry sector needs re-thinking. Innovations in the industry sector are not a common occurrence in Sri Lanka, and hence involve an element of risk in investments. (Given the present global banking/fiscal/economic crisis, it is a near impossibility that any risk would be undertaken in the coming year or two). Secondly, innovations do not automatically become public domain, and therefore an element of confidentiality is required. The NSF will consider these aspects as it continues to play a meaningful role in the industry sector.

Project monitoring and evaluation will continue to be rigorous. However, as industry research is perceived to involve capital investments, a mechanism for technology needs assessment must be incorporated into the existing framework of foresight analysis and technology forecasting. These can then form the basis of any monitoring and evaluation for accountability of such research projects.

The NSF needs to institutionalise procedures and agreements regarding intellectual property rights, patents and royalty payments to benefit the Foundation from the research it supports.

The Foundation recognises that reliable statistical data are invaluable tools for the scientific and economic development of the country and will thus expand and sustain its national databases for the science and technology management information systems.

The Foundation is committed to supporting human resource development in the basic and applied sciences by identifying specialised training needs and awarding scholarships and fellowships for such training; NSF will continue with its programmes of fellowships and scholarships. Those with postgraduate degrees will be offered fellowships to pursue their research in an advanced facility, while those with first degrees will be awarded studentships to pursue a research degree at the masters or doctorate level at a recognised university in Sri Lanka. Additionally, undergraduates who show promise as research scientists will receive studentships to assist senior researchers.

The Foundation will maintain its programme of rewarding scientists for excellence in their research achievements. Additionally, NSF will continue to award its research grantees that have conducted outstanding research and / or contributed towards national development through their research.

The Foundation recognises that in today's interdependent world, the need for collated and analysed information is a necessity. In order to achieve, and maintain, this level of sophistication, the NSLRC will be expanded and computerised to facilitate detailed searches by scientists, while seated at their desks. The NSF will ensure the timely publication and releases of its scientific journals and newsletters.

Finally, the NSF will train and re-train its Secretariat staff, as required, so that they may be able to meet the challenges of an evolving Foundation as it keeps pace with national and international development, befitting its status.

## Goals and objectives for the strategic plans, 2009-2013

Bearing in mind the NSF's functions, as stated in its Act of Incorporation (Act no 11 of 1994) and mindful that, *inter alia*, promoting the welfare of the people of Sri Lanka is of concern, the NSF has developed the following goals and objectives

Goal 1 - To initiate, facilitate and support basic and applied scientific research

Objective 1.1 To strengthen scientific research potential, and capacity, including social sciences

### Strategic plans

1.1.1 develop human resources for R&D
1.1.2 develop and strengthen R&D infrastructure
1.1.3 develop and strengthen operational frameworks for R&D

Objective 1.2 – To promote the sustainable use of natural resources

### Strategic plans

1.2.1 raise awareness on, and promote the need for, the sustainable use of natural resources (such as biological, solar, marine, mineral, water, wind) at all levels
1.2.2 identify and promote key research areas for the sustainable use of natural resources
1.2.3 strengthen relevant national and international NSF committees

Objective 1.3 – To initiate, support, and facilitate industry oriented research in all sectors by strengthening technology and knowledge transfer mechanisms

### Strategic plans

1.3.1 facilitate and support high-end technologies such as nanotechnology and biotechnology
1.3.2 develop thematic research programmes and support through contract research
1.3.3 support and facilitate research in technology development, and in agro-based industries
1.3.4 facilitate small-scale enterprises and technology transfer mechanisms
1.3.5 promote commercialisation of research and protection and exploitation of intellectual property
1.3.6 rewards for "excellence" in contributions towards national economic development

Objective 1.4 – To strengthen and enhance opportunities for training, scholarships, and fellowships in S&T, including social sciences

Strategic plans

1.4.1 identify specialised training needs, and institutionalise appropriate programmes

1.4.2 support short-term training, and postgraduate and post-doctoral research both locally and abroad

1.4.3 provide opportunities for advanced scientific study and for specialised research

Objective 1.5 - Strengthen the National Science Library and Resource Centre to develop as a Centre of Excellence

Strategic plans

1.5.1 develop and expand to become the National Centre of Excellence for information in S&T

1.5.2 enhance IT capacity

1.5.3 create networking and coordination with, and among, other resource centres

1.5.4 enhance accessibility through digitisation

1.5.5 improve liaison with international data-base providers

Objective 1.6 – Facilitate dissemination of scientific knowledge and research output

Strategic plans

1.6.1 Publish journals – Journal of the National Science Foundation and Social Science Journal regularly

1.6.2 Support publication of research in reputed international journals

1.6.3 Support workshops to disseminate research output

Goal 2 - To foster knowledge sharing and networking among scientists in Sri Lanka, and with scientists abroad

Objective 2.1 – To develop and facilitate international collaborative programmes

Strategic plans

2.1.1 facilitate and support international research partnerships

2.1.2 develop and promote institutional partnerships (esp with analogous institutions abroad)

2.1.3 as focal point for several multilateral/intergovernmental organisations, ensure full compliance in implementing relevant provisions

2.1.4 support participation, and presentations, at international fora

2.1.5 support and facilitate the Overseas Special Training Programme (OSTP)

2.1.6 develop a mechanism for expatriate scientists to return to Sri Lanka

2.1.7 establish focus groups of Lankan scientists in key countries / capitals (e.g. analogous to the SSSF)

Objective 2.2 – To support participation and presentations at international fora

Strategic plans

2.2.1 support travel grants scheme
2.2.2 disseminate information on international conferences
2.2.3 facilitate and host international conferences

Objective 2.3 - To facilitate the return of expatriate scientists to Sri Lanka, to work on S&T related research and development programmes

Strategic plans

2.3.1 develop an expatriate database

Goal 3 – To provide necessary information on S&T related infrastructure to relevant authorities for policy formulation

Objective 3.1 - To maintain and update databases on the availability of, and the current and projected need for, scientific and technological resources in Sri Lanka

Strategic plans

3.1.1. identify, develop and monitor appropriate S&T indicators for Sri Lanka and assess current and projected need for scientific and technical resources
3.1.2. review, restructure and maintain the Science and Technology Management Information System (STMIS)
3.1.3. analyse existing trends in different sectors of science and technology
3.1.4. prepare directories, related to S&T sectors, for policy formulation and analysis
3.1.5. promote and conduct policy research in S&T- related issues

Goal 4 - To popularise science to achieve 'science for all'

Objective 4.1 – To enhance an appreciation of science among school children through the school science programme

Strategic plans

4.1.1 support the school science society and school science centre programmes
4.1.2 support the publication and dissemination of the Vidurawa magazine
4.1.3 support the dissemination of S&T related information through different media
4.1.4 support the world science day programme, for schools
4.1.5 fund relevant programmes for school children

Objective 4.2 – To cultivate an appreciation of science among the general public

Strategic plans

4.2.1. support training programmes on science communication
4.2.2. promote NSF monographs & newsletters on science and technology related issues
4.2.3. collaborate with different media in disseminating S&T related information

4.2.4. Establish a national Science Centre

Goal 5 – To facilitate the strengthening of formal school science education programmes

Objective 5.1 – To enhance and strengthen capacity building of officials and teachers

Strategic plans

5.1.1 facilitate the enhancing of capacity of officials and teachers
5.1.2 promote research on different aspects of teaching science and mathematics in partnership with relevant authorities
5.1.3 facilitate and operationalise research outcome in partnership with relevant authorities

Goal 6 – To improve and strengthen the institutional capacity of the NSF

Objective 6.1–To strengthen human resource development and in-house services

Strategic plans

6.1.1 consolidate professional development of staff
6.1.2 expand facilities for meetings / seminars
6.1.3 institutionalise evaluation appraisal of staff
6.1.4 improve / strengthen information technology facilities
6.1.5 improve / strengthen printing unit

Objective 6.2 – To develop and sustain a continuous quality assessment and assurance system for NSF

Strategic plans

6.2.1 develop and institutionalise quality assessment and assurance system for NSF
6.2.2 develop a mechanism for implementing, monitoring and evaluating indicators

Objective 6.3 - To develop and promote an entrepreneurial potential for self sustenance of the NSF

Strategies

6.3.1 develop and institutionalise a revolving fund for the NSF
6.3.2 explore, develop and promote methods of revenue earnings for the NSLRC, printing unit
6.3.3 develop and institutionalise a system of patents and royalties for the NSF

Objective 6.4 – To collaborate and work with analogous / similar institutions

Strategic Plans

6.4.1 identify institutions for partnerships / collaborative work
6.4.2 develop and sustain collaborations

# Action Plan 2009

# Performance indicators

- 10 % increase, annually, in the number of publications arising from NSF research grants
- 10 % increase in the number of STMIS registrations, annually
- At least 1 research project in sustainable development per year
- Ensure updated data is available, whenever required, for policy formulation
- Return of expatriate scientists, for consultancies/assignments, associated with NSF funded programmes
- Initiate and sustain international research collaborations, to be increased by 10% annually
- Institutionalised procedures and agreements for intellectual property rights, patents and royalty payments to NSF where appropriate
- An increase in the number of split (post-graduate research) degrees awarded from NSF supported grants
- Introduction of private-public partnerships for research proposals, with an annual increase
- At least one new interdisciplinary thematic research programme per year
- 10% increase, annually, in the number of school science societies and centres nation-wide
- 10% increase in external printing contracts
- Institutionalisation of a performance appraisal and management system

## Annex 1 - Action Plans

**Goals 1** - To initiate, facilitate and support basic and applied scientific research

**Objective 1.1** To strengthen scientific research potential and capacity, including in the social sciences

| | Strategic Plans and Action Plan | Responsibilit y | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1.1<br>1.1.2 | **Develop human resources for R&D**<br>**Develop and strengthen R&D infrastructure** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Formulation of National Policy for R & D | | x | x | x | | | | | | | | | | | | | | | | | |
| | Development of related ACT and implementation | | | | | | x | x | | | | | | | | | | | | | | |
| | Workshops/consultative meetings to prioritize research | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | |
| | Advertise for applications | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| | Screening and award of Grants | | | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| | Monitoring progress | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Dissemination of research results (public fora, news-paper articles, booklets) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Infrastructure development through Equipment and Spare parts grants | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Partial support for maintenance of equipment provided by the NSF | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Awards for research excellence | | | | | x | | | | x | | | | x | | | | x | | | | x |
| 1.1.3 | **Develop and strengthen operational frameworks for R&D** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Strengthen national research capability through SUSRED Programme | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective: 1.2** - To promote the sustainable use of natural resources

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.2.1 | **Raise awareness on, and promote the need for, the sustainable use of natural resources at all levels** | | | | | | | | | | | | | | | | | | | | | |
| | Workshops/Consultative meetings/Publications to raise awareness on, and promote the need for, the sustainable use of natural resources at all levels | Head/ RD Head/ SPD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Identification of key areas for sustenance of development | Head/ ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Identify key areas for nominating Biosphere Reserves, Geo Parks and World Heritage Sites in consultation with the Forest Department and the Wildlife Department for the sustainable use of natural resources | Head/ ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.2.2 | **Identify and promote key research areas for the sustainable use of natural resources** | Head/ RD | | | | | | | | | | | | | | | | | | | | |
| | Identify and prioritize key research areas for the sustainable use of natural resources and promotion of research by funding research programmes, monitoring progress to dissemination of research results | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.2.3 | **Strengthen relevant national and international NSF Committees**<br>**• Strengthen MAB and LOICZ to cover pressing national issues** | | | | | | | | | | | | | | | | | | | | | |
| | MAB - Raise awareness to promote the need for sustenance and development through workshops | Head/ ILD | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | x |
| | * Nomination of Young Scientists for the MAB Young Scientists Award and Michael Batisse Awards | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | * Compendium on MAB Reserves | | x | x | x | x | | | | | | | | | | | | | | | | |
| | * Nomination of a Geopark | | x | x | x | x | x | x | x | x | | | | | | | | | | | | |
| | * Promoting and facilitating the MAB Concept in Sri Lankan Biosphere Reserves | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | * Participation at the International Coordinating Council | | x | | | | | | | | x | | | | | | | | | | | |
| | * Special publications of MAB | | x | | x | | | | x | | | | x | | | | x | | | | | |
| | LOICZ- Providing backstopping support to the National LOICZ Committee | Head/ ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | * Follow up meetings on management of coastal inlets | | | | x | | | | | | | | | | | | | | | | | |
| | * Maintain LOICZ data bases | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | * Publications of LOICZ Newsletter | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | Collaboration with partners (Ministry of Environment, environment related NGO's) to avoid overlap and to consolidate programmes | Head/ ILD | | | | | | | | | | | | | | | | | | | | |
| | Attend the Forest Research Committee meetings, Research Committee meetings at the Dept, of Wildlife, IWMI Consultative meetings, meetings Strengthen MAB and LOICZ to cover pressing national issues | Head/ ILD | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| | **• Other National Committees** | | | | | | | | | | | | | | | | | | | | | |
| | National Committee on Hydrology | Head/ ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | National Committee on Marine Sciences | Head/ ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | National Committee on Energy - Funding research & monitoring of progress, application, awards for excellence | Head/ TD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective 1.3** – To initiate, support, and facilitate industry oriented research in all sectors by strengthening technology and knowledge transfer mechanisms

| | Strategic Plans and Action Plan | | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3.1 | **Facilitate and support high-end technologies such as biotechnology, nanotechnology** | | | | | | | | | | | | | | | | | | | | | | |
| | 1. Biotechnology by strengthening national research capability in biotechnology | | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | • Formulation/completion of National Policy for Biotechnology | | | x | x | | | | | | | | | | | | | | | | | | |
| | • Implementation / Strategic Action | | | | | x | x | x | x | | | | | | | | | | | | | | |
| | • Funding research, monitoring of progress, application and awards for research excellence | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| | • Towards establishing Centres of Excellence in Biotechnology | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Database on Biotechnology Researchers (to be updated continuously) | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 2. National Nanotechnology Initiative | | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | • Nanotechnology policy | | | x | x | | | | | | | | | | | | | | | | | | |
| | • Funding Nanotechnology research | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Awareness programmes | | | | | | | | | | | | | | | | | | | | | | |
| | 1. For schools | | | x | x | x | x | | | | | | | | | | | | | | | | |
| | 2. For industries | | | x | x | x | x | | | | | | | | | | | | | | | | |
| | 3. For R & D institutions/ professionals | | | x | x | x | x | | | | | | | | | | | | | | | | |
| | 4. General public (TV programmes) | | | x | x | x | x | | | | | | | | | | | | | | | | |
| | 5. International conference | | | | | x | | | | | | | | | | | | | | | | | |
| | 3. Inter-ministerial Committee on Bio fuel | Identify and support national programmes, (new initiatives other than providing funding may arise as per the Committees' recommendations) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.3.2 | **Develop thematic research programmes and support through contract research** | | | | | | | | | | | | | | | | | | | | | | |
| | 1. National Thematic Research Programme (NTRP) - Identify priority themes and research groups, awards made as contract grants, monitor progress, pursue application of research results and dissemination | | Head/RD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 2. Coordinated Thematic Research Programme (CTRP) - Monitor ongoing grants, application and dissemination of research results | | Head/RD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 3. Thematic Committee for Technologies for Rural Sector Development | Funding research & monitoring of progress, application, awards for excellence | Head/TD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 4. Thematic Committee on Biofuel | Identify and support national programmes, (new initiatives other than providing funding may arise as per the Committees' recommendations) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

| Strategic Plans and Action Plan | | | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.3.3** | **Support and facilitate research in technology development and in agro-based industries** | | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | Grant Schemes<br>• Support Research into Technology Development Support Scaling Up Studies<br>• Support Industrial R & D<br>• Support for Innovation<br>• Support to Start up Businesses by Entrepreneurial Scientists | 1. Advertise for applications | | | | | x | | | | x | | | | x | | | | x | | | | x |
| | | 2. Processing/evaluation | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | | 3. Award of grants | | | x | | | | x | | | | x | | | | x | | | | x | | |
| | | 4. Monitoring of progress | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | 5. Grantees seminars | | | | x | | | | x | | | | x | | | | x | | | | x | |
| | | 6. Follow up of all NSF completed projects /dissemination of project results | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | 7. NSF awards for excellence | | | | | x | | | | x | | | | x | | | | x | | | | x |
| **1.3.4** | **Facilitate small-scale enterprises and technology transfer mechanisms** | | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | 1. Building regulatory frameworks/ tools for technology development & promotion | UI-IP policy | | x | x | | | | | | | | | | | | | | | | | | |
| | | Innovation survey in collaboration with the STPRD | | | | | | | | | | | | | | x | x | x | x | | | | |
| | 2. Building institutional capabilties in technology development & promotion | National/institutional IP policies | | | | | | | | x | x | x | x | | | | | | | | | | |
| | | Seminars with local industries and SMEs | | | | | x | | | | x | | | | x | | | | x | | | | x |
| | | Workshops for technology need assessment | | | | x | | | | x | | | | x | | | | x | | | | x | |
| | 3. Technological information dissemination | Technology databank | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | Techwatch Lanka e-Newsletter | | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x |
| | 4. Collaborative activities with the "Vidatha Centres"<br>• To fulfill laboratory testing requirements and quality improvement of products of rural sector SMEs<br>• Identification of resources available and needs of the SMEs in the rural areas for new SME development initiatives<br>• Provide technological inputs (from NSF and other projects) for income generation by the SMEs | Create a database | | x | x | x | | | | | | | | | | | | | | | | | |
| | | facilitate requests/requirements | | | | | x | x | x | x | | | | | | | | | | | | | |
| | | Establish and support R & D activities of SMEs | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | Study of available reports | | | | x | x | x | | | | | | | | | | | | | | | |
| | | Proposals to relevant institutions for activation of recommendations | | | | | | x | x | x | x | | | | | | | | | | | | |
| | | Collection of requests from STOs | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | Arrange consultancies facilitating SME development & originating new enterprises | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

| Strategic Plans and Action Plan | | | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| **1.3.5** | **Promote commercialisation of research and protection and exploitation of intellectual property** | | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | 1. IP education in the universities & schools | Continuation of the existing project<br>• Stage 2 (other faculties) | | x | x | x | x | | | | | | | | | | | | | | | | |
| | | • Stage 3 (schools) | | | | | | x | x | x | x | | | | | | | | | | | | |
| | 2. Awareness building activities | • Workshops for "Vidatha" Centres | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | |
| | | • Workshops for schools | | | | | x | | | | x | | | | x | | | | x | | | | x |
| | | • Workshops for R & D institutions | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | |
| | | • Seminars for train the trainers of teaching IP for universities | | | | | x | | | | x | | | | x | | | | x | | | | x |
| | | • Publications on IP | | | | x | | | | x | | | | x | | | | x | | | | x | |
| | 3. Provide consultancy/patent information | As per the requests | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 4. Patent desk to provide search facilities | Establishing the patent desk/functioning | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 5. Financial support for patenting, renewing and patent drafting | As per the requests | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 6. Facilitate capacity building for protection of IP | Collection of information of IP lawyers and patent draftsmen | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | Facilitate development of human resources needed in patent drafting | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **1.3.6** | **Rewards for excellence in contributions to national economic development** | | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | Review of the evaluation scheme/ procedure | | | | x | x | | | | | | | | | | | | | | | | | |
| | Follow up and assessment of progress under already presented awards for the last four years | | | x | x | x | x | | | | | | | | | | | | | | | | |
| | Biannual National S & T Awards ceremony | | | | | | | | | | x | | | | | | | | x | | | | |

**Objective 1.4** – To strengthen and enhance opportunities for training, scholarships, and fellowships in S&T, including social sciences

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 1.4.1 | **Identify specialised training needs, and institutionalise appropriate programmes** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| 1.4.2 | **support short-term training, and postgraduate and post-doctoral research locally** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Research Fellowships, Postdoctoral Research Scientists, Research Scholarships | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.4.3 | **Provide opportunities for advanced scientific study and for specialized research** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Prioritize research needs, advertise for applications, screening, award grants, monitor progress, application and dissemination of research results | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective 1.5** - Strengthen the National Science Library and Resource Centre to develop as a Centre of Excellence

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 1.5.1 | **Develop and expand to become a national centre of excellence for Information in S & T** | Head/ NSLRC | | | | | | | | | | | | | | | | | | | | |
| | 1. Strengthen the Resources base | | | | | | | | | | | | | | | | | | | | | |
| | • Identify current needs & future demands for scientific literature through national surveys | | x | x | x | x | | | x | | | | x | | | | x | | | | | |
| | • Acquire resources/subscribe to databases/ establish online consortia of scientific literature | | | | | x | | | | x | | | | x | | | | x | | | | x |
| | • Strengthen the National Repository of S & T Literature | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Establish a common platform for scientists to upload their literature/ publications-<br>• Expand the Institutional e-repository framework among S & T institutions | | | x | x | | | x | | x | | x | | | | x | | | x | | | |
| | • Expand the Sri Lanka Journals On-Line Database (SLJOL) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 2. Offer Information Services: literature search s/ Document delivery/Copy duplication/Current Awareness | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 3. Strive for excellence : Obtain ISO 9001 : 2000 certification | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 4. Raise Awareness on the resources & services available : Conduct user seminars, prepare promotional material | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| | 5. Serve as the National Unit of the Asia Pacific Information Network/the IFAP (Information For All Programm : Coordinate Information Dissemination activities among different sectors in the country | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 1.5.2 | **Enhance IT Capacity** | Head/NSLRC | | | | | | | | | | | | | | | | | | | | |
| | Staff Training on IT based Library & Information dissemination applications | | | x | x | x | | | x | x | | | x | x | | | x | x | | | x | x |
| | Distribute Library Management Software package (CDS/ISIS) among libraries/ information Centres in the country | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Conduct Training programmes for library professionals in the country on computer applications in libraries/information centres to promote more efficient services. | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.5.3 | **Create networking and coordination with and among, other resource centres** | Head/NSLRC | | | | | | | | | | | | | | | | | | | | |
| | 1. Maintain MIS for National databases for Resource sharing among the scientific community in the country *(facilitate information searching, location of resources, document exchange, document delivery)* | | | | | | | | | | | | | | | | | | | | | |
| | • Sri Lanka Science Index (SLSI) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Sri Lanka Journal of on-line (SLJOL) - Full Text database | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Integrated Research Grants database : Integrate NSF Research Grants database (RGRA) with other funding Institutions | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Newspaper Articles database (Newsp) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Union List of Periodicals (UNILIST) | | | | | | x | x | x | x | | | | | | | | | | | | |
| | • Current List of Periodicals (CLIST) | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | • NSLRC Catalogue (SLSTICAT) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 2. Maintain a Central website to act as a Gateway to Local & Global resources in order to provide nationwide accessibility | | | | | | | | | | | | | | | | | | | | | |
| | • Link on-line databases/information services/resources to the NSLRC central web site | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Host catalogue/other databases of other Institutions | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | • Promote development of S & T e-repository network among APIN (Asia Pacific Information Network) countries | | | | x | x | x | | | | | | | | | | | | | | | |
| | 3. Support development of other S & T libraries/information centres in the country<br>Conduct seminars/workshops to keep library professionals abreast of new developments in the field of information dissemination | | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x |

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 1.5.4 | **Enhance accessibility through digitization** | Head/NSLRC | | | | | | | | | | | | | | | | | | | | |
| | Digitization of the National Repository of local S & T literature | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | |
| | Provision of on-line access to full text of documents | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.5.5 | **Improve liaison with international data-base providers** | Head/NSLRC | | | | | | | | | | | | | | | | | | | | |
| | Coordinate with other key S & T Institutions & International Database vendors for the establishment of online consortia of scientific databases (abstracts/full text) | | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x |
| | Ensure nationwide access | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective 1.6** – Facilitate dissemination of scientific knowledge and research output

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 1.6.1 | **Publish JNSF & JSS regularly** | Editorial Staff | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.6.2 | **Support publication of research in reputed international journals for dissemination of research results locally and internationally** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Provide funding as and when necessary to NSF grantees to meet the cost of publications in international journals | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 1.6.3 | **Support workshops to disseminate research output** | Head/RD | | | | | | | | | | | | | | | | | | | | |
| | Workshops, panel discussions, newspaper articles | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Goal 2** - To foster knowledge sharing and networking among scientists in Sri Lanka, and with scientists abroad

**Objective 2.1** – To develop and facilitate international collaborative programmes

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.1.1 | **Facilitate and support international collaborative partnerships** | Head/ILD | | | | | | | | | | | | | | | | | | | | |
| | International Partnerships for Science and Technology (IPSAT) | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Initiate an overseas Scholarships and Fellowship Programme and award Scholarships and Fellowships | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.1.2 | **Develop and promote institutional partnerships (especially with analogous institutions abroad)** | Head/ILD | | | | | | | | | | | | | | | | | | | | |
| | Develop links with organization | | | | | x | | | x | | | | x | | | | x | | | | x | |
| 2.1.3 | **As the focal point for several multilateral / intergovernmental organizations, ensure full compliance in implementing relevant provisions** | Head/ILD | | | | | | | | | | | | | | | | | | | | |
| | TWAS - Awareness creation, call for applications, ensure information given to TWAS in order to receive funds in time, ensure winners are notified in time, arrangements for the award ceremony | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | ICSU - Dissemination of information received form the regional office of ICSU and nomination of scientists to various ICSU activities, ensure information dissemination | | x | x | | x | | x | x | | x | x | | x | x | | x | x | | x | x | |
| | The Federation of Asian Biotech Associations (FABA) | | x | x | | x | | x | x | | x | x | | x | x | | x | x | | x | x | |
| | ICGEB - Information dissemination & submit applications to the Research Division on receipt of applications IFS | | x | | | | x | x | | | x | x | | x | x | | x | x | | x | x | |
| | * Nominations for IFS research grants | | | x | | | | x | | | | x | | | | x | | | | x | | |
| | * Training workshop on Formulation of research proposals | | x | x | x | | | | | | | | | | | | x | x | x | | | |
| | Ethics of Science &Technology<br>* Teaching of Ethics to school teachers and university teachers | | | x | x | | | | | | x | x | x | | x | x | | | x | x | | |
| | * Workshop on Ethics on Science and Technology (COMSET) | | x | x | | | | | | | | | | | | | | | | | | |
| | * Translations of UNESCO Bioethics Publications | | | x | | | | | | x | | | | | x | | | | x | | | |
| | UNESCO Educational and Scientific programmes | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | STEPAN - Establishment of a STEPAN Coordinating Committee, formulation of STEPAN action plan and organization of STEPAN Board meetings | | | x | x | | x | | x | | x | | x | | x | | x | | | | | |
| | STEPAN special publications emerging out of workshop and seminars and Newsletter | | | x | | | | x | | | | x | | | x | | | x | | | x | |
| | SAARC Biotech Conference with the Ministry of S & T | | | | | x | | | | | | | | | | | | | | | | |

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 2.1.4 | **To support and facilitate Overseas Special Training Programme** | Head/ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 1. Short Term Training<br>* Identify strategies<br>* Identify institutions for training<br>* Disseminate information<br>* Establish review committees and coordinate quarterly meetings ensure follow-up, liaise with beneficiaries to ensure successful applicants receive grants, ensure smooth flow of the programme and supervise NSF's administrative component<br>* Make suitable agreements | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | 2. Develop New Programme for medium and long term Overseas Training | | | | | | x | | | | x | | | | x | | | | x | | | |
| 2.1.5 | **Develop a mechanism for expatriate scientist to return to Sri Lanka** | Head/ILD | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.1.6 | **Establish focus groups of Lankan scientists in key countries / capitals (analogous to SSSF)** | Head/ILD | | | | x | | | | x | | | | x | | | | x | | | | x |

**Objectives: 2.2** - To support participation and presentation at international fora

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.2.1 | **Support travel grant scheme**<br>Travel grants to participate at international seminars / workshops Coordinate meetings; liaise with beneficiaries to ensure successful applicants receive grants. Supervise NSF's administrative component (Internal procedure – Review by the Sub Committee and submit Sub Committee recommendation to the Board for approval) | Head/ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.2.2 | **Disseminate information on international conferences** | Head/ILD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.2.3 | **Facilitate and host International Conferences** | Head/ILD | | | | | | | | | | | | | | | | | | | | |
| | * International Conferences on Nanotechnology | | | | x | | | | | | | | | | | | | | | | | |
| | * International Forum on the Social Sciences | | | | | x | | | | | | | | | | | | | x | | | |
| | * International Conferences on S& T Policy | | | | | x | | | | | | x | | | | | x | | | | x | |

**Objective 2.3** – To facilitate the return of expatriate scientists to Sri Lanka to work on S&T related research and development programmes

| Strategic Plans and Action Plan | | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| 2.3.1 | **Develop & update expatriate scientists database** | Head/STPRD | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Goal 3** – To provide necessary information on S&T related infrastructure to relevant authorities for policy formulation

**Objective 3.1** - To maintain and update databases on the availability of, and the current and projected need for, scientific and technological resources in Sri Lanka

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
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| **3.1.1** | **Identify, develop, and monitor appropriate S & T indicators for Sri Lanka and assess current and projected need for scientific and technical resources** | | | | | | | | | | | | | | | | | | | | | |
| | Conduct National R&D survey 2008 | Head/STPRD | x | x | x | x | | | | | x | x | x | x | | | | | x | x | x | x |
| | Conduct Innovation survey 2008 | | | x | x | | | | | | x | x | x | x | | | | | x | x | x | x |
| | Equipment Survey in S&T sector organizations | | x | x | x | | | | | | x | x | x | | | | | | x | x | x | |
| | Survey on Technical Personnel in S &T organizations | | x | x | x | | | | | | x | x | x | | | | | | x | x | x | |
| | Survey on S&T Graduate Teachers | | | | | | x | x | | | | | | | | | | | | | | |
| | Survey on expertise (Scientists) in different disciplines | | x | x | x | | | | | | x | x | x | | | | | | x | x | x | |
| | Technology Foresight | Head/TD | | | | | | | | | | | | | | | | | | | | |
| | *Foresight awareness workshop in collaboration with UNIDO (food technologies) | | | | | x | | | | | | | | | | | | | | | | |
| | *Foresight survey/study in food technology | | | | | x | x | x | x | | | | | | | | | | | | | |
| | *National foresight study to define future orientation of technology programmes in accordance with rapid technological change (to be considered after the workshop with UNIDO) | | | | | | | x | x | x | x | | | | | | | | | | | |
| **3.1.2** | **Review, restructure and maintain the Science and Technology Management Information System (STMIS)** | Head/STPRD | | | | | | | | | | | | | | | | | | | | |
| | Maintain National S&T Information System (STMIS) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | Update of existing records | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | Issuing IDs to registered Scientists | | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x |
| **3.1.3** | **Analyse existing trends in different sectors of Science and Technology** | Head/STPRD | | | | | | | | | | | | | | | | | | | | |
| **3.1.4** | **Prepare directories , related to S&T sectors, for policy formulation and analysis** | | | | | | | | | | | | | | | | | | | | | |
| | Analyse data and prepare directory of advanced scientific instruments available in Sri Lanka | | | | | x | x | | | | x | x | | | x | x | | | x | x | | |
| **3.1.5** | **Promote and conduct policy research in Science and Technology related issues** | | | | | | | | | | | | | | | | | | | | | |
| | Tracer Study on S&T graduates (After 5 years of graduation) | Head/STPRD | | | x | x | x | x | x | | | | | | | | | | | | | |
| | Tracer Study on IT graduates | | | x | x | x | | | | | | | | | | | | | x | x | x | |
| | Survey on S&T Doctoral Degree holders | | x | | | | | | | | | | | | | | | | | | | |

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| | Study perception of employers on S&T graduate employees | Head/ STPRD | x | x | x | | | | | | | | | | | | | | | | | |
| | Cluster Study on Coir pith Industry | | x | x | | | | | | | | | | | | | | | | | | |
| | Cluster Study on Indigenous knowledge-health science | | x | x | x | | | | | | | | | | | | | | | | | |
| | Policy Study I - to be identified by Advisory Board | | | | | | x | x | x | | | | | | | | | | | | | |
| | Policy Study II -to be identified by Advisory Board | | | | | | | | | | x | x | x | | | | | | | | | |
| | Policy Study III - to be identified by Advisory Board | | | | | | | | | | | | | | x | x | x | | | | | |
| | Cluster Study I - to be identified by Advisory Board | | | | x | x | x | | | | | | | | | | | | | | | |
| | Cluster Study II- to be identified by Advisory Board | | | | | | | | x | x | x | | | | | | | | | | | |
| | Cluster Study III - to be identified by Advisory Board | | | | | | | | | | | | x | x | x | | | | | | | |
| | Survey on S&T Graduate Teachers, Indigenous medical personnel | | | | | | | | | | | | | | x | x | x | | | x | x | x |
| | Surveys & Studies | Head/ TD | | | | | | | | | | | | | | | | | | | | |
| | * Statistics of IP usage/IP policy | | | | | | x | x | | | | | | | | | | | | | | |
| | * Innovation survey in collaboration with the STPRD | | | | | | | | x | x | x | x | | | | | | | | | | |
| | * Impact assessment of technology transfer & commercialization | | x | x | x | x | | | | | | | | | | | | | | | | |

**Goal 4** – To popularise science to achieve science for all

**Objective 4.1** - To enhance an appreciation of science among school children through the school science programme

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.1.1 | **Support the school science society and school science** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | School Science Society programme | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 4.1.2 | **Support the publication and dissemination of the Vidurava magazine** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | Vidurava Science Magazine | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 4.1.3 | **Support the dissemination of S&T related information through different media** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | * Creative Story Books<br>* TV and Radio programmes on S &T for school children<br>* Video conferences on S & T for school children | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 4.1.4 | **Support the world science day programme, for schools** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | National Science Week and Schools programme | | | | | x | | | | x | | | | x | | | | x | | | | x |
| 4.1.5 | **Fund relevant programmes for school children** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | * National Olympiad<br>* Workshops/ Seminars | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective 4.2** - To cultivate an appreciation of science among the general public

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.2.1** | **Support training programmes on science communication** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | * Training programmes/workshops on Science Communication<br>* Establishment of a Media Unit & a Science communication Centre | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **4.2.2** | **Promote NSF monographs & newsletters on science and technology – related issues** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | Science Books Series | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **4.2.3** | **Collaborate with different media in disseminating S&T related information** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | * Programme on Science & Technology ; Nanotechnology campaign<br>* NSF Science Magazine on TV – Vidumahima<br>* Collaborate programme with Sri Lanka Rupavahini Corporation (SLRC)<br>* Establishing an Effective communication network among schools, Vidatha centres etc.<br>* Publicizing NSF activities via media conferences, press releases etc.<br>* The Journal of National Science Foundation<br>* Survey on Public understanding of Science | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **4.2.4** | **Establish a national Science Centre** | Head/SPD | | | | | | | | | | | | | x | x | x | x | x | x | x | x |

**Goal 5** - To facilitate the strengthening of formal school science education programmes

**Objective 5.1** - To enhance and strengthen capacity building of officials and teachers

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5.1.1** | **Facilitate the enhancing of capacity of officials and teachers** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | Vidunetha training programme for teachers and students | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **5.1.2** | **Promote research on different aspects of teaching science and mathematics in partnership with relevant authorities** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | * National Science Research Projects competition and Sri Lanka Science & Engineering Fair<br>* Funding for science based research projects<br>* Science Jamboree & science fair | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **5.1.3** | **Facilitate and operationalise research outcome in partnership with relevant authorities** | Head/SPD | | | | | | | | | | | | | | | | | | | | |
| | Establishing science centres at provincial level | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Goal 6** – To improve and strengthen the institutional capacity of the NSF

**Objective 6.1** – To strengthen human resource development and in-house services

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6.1.1** | **Consolidate professional development of staff** | AO | | | | | | | | | | | | | | | | | | | | |
| | Assess and evaluate HR Requirements | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | Recruit appropriate staff | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| | Identify training requirements | | x | | | | x | | | | x | | | | x | | | | x | x | | |
| | Prepare annual training calendar | | x | | | | x | | | | x | | | | x | | | | x | x | | |
| | Training of employees | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **6.1.2** | **Expand facilities for meetings / seminars** | AO | | | | | | | | | | | | | | | | | | | | |
| | Assess requirements & forecast future needs | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | Construct meeting rooms | | | | | | x | x | x | | | | | | | | | | | | | |
| | Renovate existing auditorium | | x | x | | | | | | | | | | | | | | | | | | |
| | Auditorium - refurbish/expand | | | | | | | x | x | x | | | | | | | | | | | | |
| | Board room - refurbish/expand | | | | | | | x | x | | | | | | | | | | | | | |
| **6.1.3** | **Institutionalise evaluation appraisal of staff** | Director | | | | | | | | | | | | | | | | | | | | |
| | Conduct performance evaluations for all staff | | x | | | | | | | | | | | | | | | | | | | |
| | Review half-yearly to evaluate | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | |
| | Revise form, if required | | | | x | x | | | x | | | | x | | | | x | | | | x | |
| **6.1.4** | **Improve / strengthen information technology facilities** | Coordinator/IT Unit | | | | | | | | | | | | | | | | | | | | |
| | Review current facilities & identify future needs | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | Upgrades/Replacements | | | | | | | | | | | | | | | | | | | | | |
| | * Computer Upgrades/Replace | | x | | | | x | | | | x | | | | x | | | | x | | | |
| | * Server Room Upgrades/Replace | | | | | | | x | | | | | | | | | | | | x | | |
| | * Network equipments | | x | | | | | | | | | x | | | | | | | | x | | |
| | WAN bandwidth upgrade | | x | | | | x | | | | | | | | x | | | | | | | |
| | Business Process Automation | | | | | | | | | | | | | | | | | | | | | |
| | * Upgrading Attendance monitoring system | | | x | | | | | | | | | | | | x | | | | | | |
| | * New implementations (Finance system etc.) | | | x | x | x | | | | | | | | | | | | | | | | |
| **6.1.5** | **Expanding the printing facilities according to the work load by introducing new equipment** | Manager / Printing Unit | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

**Objective 6.2** – To develop and sustain a continuous quality assessment and assurance system for NSF

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.2.1 | **Develop and institutionalise quality assessment and assurance system for NSF** | Director | | | | | | | | | | | | | | | | |
| | Complete and establish SOPs | | x | | | | | | | | | | | | | | | |
| | Complete quality manual | | | | x | | | | | | | | | | | | | |
| | Complete quality assurance system and obtain SLSI certification | | | | | x | x | | | | | | | | | | | |
| | Ensure system is periodically reviewed | | | | | | | | x | | | | x | | | | | x |
| 6.2.2 | **Develop a mechanism for implementing, monitoring and evaluating indicators** | Director | | | | | | | | | | | | | | | | |
| | Formulate, develop and institutionalise indicators | | | | | | x | | | | | | | | | | | |
| | Monitor | | | | | | | x | | x | | x | | x | | x | | x |
| | Evaluate | | | | | | | | | | | | | | x | | | x |

**Objective 6.3** - To develop and promote an entrepreneurial potential for self sustenance of the NSF

| | Strategic Plans and Action Plan | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.3.1 | **Develop and institutionalise a revolving fund for the NSF** | Director | | | | | | | | | | | | | | | | |
| | Prepare concept and seek Board approval | | | | | | x | x | | | | | | | | | | |
| | Seek potential donors | | | | | | | | x | x | x | x | | | | | | |
| | Establish fund | | | | | | | | | | | | x | x | | | | |
| 6.3.2 | **Explore, develop and promote methods of revenue earnings for the NSLRC, printing unit** | Director | | | | | | | | | | | | | | | | |
| | prepare concepts for NSLRC & Printing unit | | | | | | | x | x | | | | | | | | | |
| | seek approval from relevant advisory boards | | | | | | | | | x | x | | | | | | | |
| | prepare Board Paper; seek Board of M's approval | | | | | | | | | | x | x | x | x | | | | |
| | institutionalise revenue system for NSLRC and PU | | | | | | | | | | | | | | x | x | x | x |
| 6.3.3 | **Develop and institutionalise a system of patents and royalties for the NSF** | Director | | | | | | | | | | | | | | | | |
| | develop system; seek B of M's approval | | | | | | | | | | x | x | x | x | | | | |
| | institutionalise system | | | | | | | | | | | | | | x | x | x | x |

**Objective 6.4** – To collaborate and work with analogous/similar institutions

| Strategic Plans and Action Plan | | Responsibility | 2009 (yr) | | | | 2010 (yr) | | | | 2011 (yr) | | | | 2012 (yr) | | | | 2013 (yr) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6.4.1** | **Identify institutions for partnerships / collaborative work** | Heads of all Scientific Divisions & of NSLRC | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **6.4.2** | **Develop and sustain collaborations** | Heads of all Scientific Divisions & of NSLRC | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |