

Report of the
Institutional Performance Review

Sri Lanka Standards Institution

May 2015

Report of the Institutional Performance Review

Sri Lanka Standards Institution

Review Panel

Prof. Dr. Rahula Anura Attalage

Mr. D. Kodagoda

Mr. H.L.R.W. Madanayake

Prof. Ramanee Wijesekera

CONTENTS

Abbreviations	II
Acknowledgement	III
Executive Summary	1
1. Sri Lanka Standards Institution (SLSI)	5
I. The Mandate of the SLSI	6
II. The Vision & Mission Statements	6
III. Sources of Funding	7
IV. The Context	
	9
2. The Review Procedure	9
I. The Panel and the Methodology	10
II. The Pre-Assessment	
III. The Structure of the Report	
3. Management Assessment	
I. Institutional response to external and internal environment in planning	11
organizational strategies	12
II. Planning S&T Programs and Setting Priorities	13
III. Planning S & T Projects and R & D	13
IV. Activity Management and Maintenance of Quality	16
V. Human Resource Management	18
VI. Management of Organizational Assets	20
VII. Coordinating and integrating the internal functions/units/activities	21
VIII. Partnerships in managing information dissemination	23
IX. Monitoring, evaluation and reporting procedures	
	25
4. Output Assessment	
	33
5. Findings and Recommendations	
	i
Appendix 1: Management Assessment Tables	
	xi
Appendix 2: The Terms of Reference of the Review Panel	

Abbreviations

NASTEC	National Science and Technology Commission
SLSI	Sri Lanka Standards Institution
S & T	Science and Technology
R & D	Research and Development
PDCA	Plan-Do-Check-Act
TOR	Terms of Reference
DG	Director General
DDG	Deputy Director General
SDD	Senior Deputy Director
DD	Deputy Director
SWOT	Strengths-Weaknesses-Opportunities-Threats
MIS	Management Information System
IQA	Internal Quality Assurance
EQA	External Quality Assurance
PT	Proficiency Testing
QA	Quality Assurance
SLAB	Sri Lanka Accreditation Boards
SOR	Scheme of Recruitment
DMS	Department of Management Services
IESL	Institute of Engineers Sri Lanka
SLIP	Sri Lanka Institute of Physics
SLS	Sri Lanka standards
ICChemC	Institute of Chemistry Ceylon
NQA	National Quality Awards
MUSSD	Measurements Units, Standards and Services Department
NMI	National Measurements Institute
GMP	Good Management Practices
OHSAS	Occupation Health Safety Assurance Series
UDA	Urban Development Authority

Acknowledgement

The Review Panel wishes to acknowledge the confidence placed on them by the National Science and Technology Commission (NASTEC) for conducting the performance review of Sri Lanka Standards Institution.

The initial discussion panel members had with the Chairman and the senior management of NASTEC, along with the information provided in their Review Manual assisted the panel in carrying out this review successfully. We also appreciate the support given to the panel by NASTEC Acting Director Dr. Muditha Liyanagedera and, Senior Scientist Ms. Asha Pitadeniya. Ms Pitadeniya coordinated the review activities efficiently by arranging meetings, obtaining the information and documents requested by the panel and formatting the final report.

We are grateful to the Director-General Dr. Lalith Senaweera, Deputy Director General Mr. Gamini Dharmawardena and the Executive staff of SLSI for the cooperation extended to the panel for carrying out this review. The panel was well received by SLSI every time the members visited their facility. Heads of all divisions and their staff members provided useful information which enabled the panel to develop its own professional opinion with regard to the performance of SLSI. The union representatives and the stakeholders also provided the panel with valuable inputs and we wish to thank all these parties for their participation.

Executive Summary

I) Institutional response to external and internal environment in planning organizational strategies

SLSI has a Corporate Plan which is a 05 year rolling plan and it forms the basis for all institutional strategic actions that drives the institute towards its well established mission. Each division of the institute is expected to derive an Annual Action Plan from the Corporate Plan, for the purpose of establishing the framework for the strategic actions.

The current Corporate Plan has been developed through a disintegrated top-down approach without an appropriate level of consultation with the division levels and also with direct stakeholders. The said process is rather of *ad hoc* nature but not systematic according to standard practices but with the top management deciding the strategic activities as per the institution's mission. This lacks consultation with the implementation levels thus not enabling the institution to craft the strategic activities in a meaningful and effective manner in achieving the institutional goals and meeting intended performance levels.

A more effective development process for the Corporate Plan would be through an integrated approach with an appropriate level of consultation with the division levels and also with direct stakeholders in view of establishing the strategic actions at divisional levels in achieving the corporate goals set by the top management as per the SLSI's mandate and its proper SWOT analysis.

Furthermore, adapting the practice of deriving an annual action Plan for each division, stemming out of the Corporate Plan, where strategic divisional level actions are planned with progress monitoring at appropriate intervals relative to the performance indicators is deemed essential.

II) Planning S & T Programs and Setting Priorities

Each division is expected to carry out planning S & T programs falling line with the Corporate Plan of the Institution.

The planning of activities within each Division takes place as led by Division Head, with representation from all levels within the Division and expected to identify the required resources. The top management and the other Divisions are kept informed of the expected output. The top management prioritizes and decides the manner in which the resources are to be allocated from an institutional perspective. However, this appears to be merely based on the previous year's output/activities but not really on information/data ascertained and forecasting.

A process of corporate level planning of S & T programs taking into account the eco system dynamics (but not only limited to the type 'Business as Usual' relying only on typical activities within the comfort zone) would be essential. Thus, it is important to move towards carrying out planning of S & T programs based on information/data ascertained in meeting the stakeholder needs, market potential and niche areas considering the national eco system and competitive advantages from a local as well as international perspectives but not only on merely previous years data/information.

III) Planning of S & T Projects and R & D

The mission of SLSI mandates the Institution to carry out Research & Development activities thereby bringing in benefits to the general public and the country as a whole.

The Institution at present does not explicitly carries out Research & Development activities as stipulated in its mission and furthermore the Corporate Plan does not indicate that this activity would be envisaged in the Institution's future endeavors.

The R & D activities are important to the SLSI for the Institution to understand the evolution of the macroscopic platform of the related activities, to be on par with international trends and to infuse innovation enabling entry into niche areas, in particular, the potential of R & D activities in the divisions of Standardization, Metrology, Testing Laboratories and Quality Control.

IV) Activity management & maintenance of quality

The aspects of management of activities of the Institution encompass those of generic nature but not involving those of R & D nature, in a true sense.

In view of activity management, senior management meetings are held to review progress of divisional activities on a monthly basis. However, many divisions do not conduct formal meetings to review the progress of their divisional activities with respect to their Annual Action Plans. The explicit application of the PDCA (Plan-Do-Check-Act) approach is not visible at institutional level. Hence, strengthening the procedure of continuous monitoring of the Annual Action Plans of the divisions relative to the stipulated performance indicators with emphasis on the PDCA approach in management is essential.

With the present focus of the top management on the financial perspective, the Institution places much emphasis on income generation. There is evidence to establish an opinion that the Institution has not paid adequate attention in meeting the requirement of its key stakeholders which is a major deficiency and also a failure in meeting its obligations as per its own mission. The inability of the SLSI's management to strike an optimum trade-off between emphasis on income generation and activities targeting achieving key corporate goals could be considered as a major reason for this. It is also necessary to ensure the competency, confidentiality, integrity and the transparency of the outsourced laboratories to the satisfaction of the stakeholders with a proper benchmarking.

Even though several divisions have implemented an internal quality assurance procedure through an established quality framework that works appropriately, the top management should very seriously consider developing/adopting a robust internal quality assurance mechanism in endeavoring to reach the status of a globally accepted quality certified institute.

V) Human Resource Management

The SLSI Corporate Plan has not explicitly considered any strategic actions for human resource management through their SWOT analysis, which has a negative impact on human resource management of the Institution.

Timely recruitment, development & mobilization of capacity of key personnel required for implementation of strategies for achieving the goals of the Corporate Plan are critical for the excellent performance of any organization.

There had been notable delays in recruitment at SLSI in the recent past apparently due to the time taken to negotiate the requirements of the SOR with the DMS. It is also noted that in the scientific, engineering and technical fields, more than 20% of the vacancies have not been filled during the past 5 years and this is 45% in the case of Management Assistant Technical.

The staff training is conducted in an *ad-hoc* manner without a proper annual training plan based on the skill & competence requirements of the staff from an institutional perspective. This is an inward looking approach that deteriorates the potential of the staff. Specialized training to develop expertise within the institution is not considered to be necessary for the scientific / engineering / technical staff as they are required to be engaged in various activities. SLSI, not developing its own expertise in certain areas affect the overall performance of the Institution.

The policy of rotating the employees among the divisions of the institution has also apparently induced a negative effect on the aspect of developing the expertise within the organization.

The Executive Staff performance appraisal process being used at present is the one that had been developed and implemented long time ago. The initiative to introduce the balance score card method is considered as a positive step in this regard.

VI) Management of Organizational Assets

A well-qualified and dedicated staff with expertise in the relevant areas, well-equipped laboratories and a supporting infrastructure would be mandatory to successfully execute the duties of the SLSI stemming out of its Corporate Plan.

The SLSI has been reasonably successful in retaining staff and consequently, the knowledge base of its staff and their experience thus conserved is an asset to the Institution. However, the Institution remains understaffed almost at all levels, but the recruitment process for Administrative Staff has had positive results over the three year period. This situation has a significant bearing on the productivity and output of the organization, particularly in the context of the continuously increasing workload.

The buildings are on the whole well maintained and an internal technical committee is responsible for managing the electricity and water consumption of the Institution. However, many divisions have acute space constraints.

The majority of the equipment is in good working order and is calibrated regularly, in-house. However, some of the critical equipment is not in working order and needs urgent attention in assessing its present status and taking corrective action. It is imperative that the purchase procedures take place without undue delays.

Prior to 2010, SLSI was funded primarily through the Government grants. The Institution is now self-sufficient in terms of funding.

VII) Coordinating and Integrating the internal functions / units / activities

Each division is expected to function efficiently and also interact effectively with other relevant divisions in order to achieve the goals set out in the Corporate Plan of the Institution.

The roles and primary functions of the respective Divisions of the Institution are well defined. The coordination of activities within many Divisions is satisfactory taking place either through 'formal' monthly meetings or 'informal' meetings chaired by the Division Head. The top management and the other Divisions are kept informed of the outcomes and key issues of each Division through formal monthly 'Management meetings' chaired by the Director General.

The test results and data generated by each unit / Division is maintained by the respective unit / Division either electronically or / and hard copy. However, a robust, well designed, Management Information System (MIS) is essential.

VIII) Partnership in managing information dissemination

It is essential for the SLSI to be sensitive to the dynamics of the eco system and also be able to compare the present situation in the country with that of requirements of the international market with respect to its core activities.

Various service divisions such as Laboratory Services Division, Metrology Services Division and Certification Division do have statistical data pertaining to their clients enabling a swift and a better service. The data pertaining to the country as a whole is not available and the SLSI cliental cannot be regarded as a representative sample of the country. The Marketing and Promotions Division, which in normal circumstances, may be mandated with this task, needs improvements in staff levels, training in various aspects of designing surveys, data collection, evaluations and recommendations to the higher-levels.

The Standardization Process requires expertise from many fields, both from academic knowledge as well as practical expertise generated by hands on real world activities. The working committees provide the core pool of experts.

The group of key partners should include the Research Laboratories established for specific narrow fields, such as TRI, and mandated to issue trade related guidelines and various authorities, such as UDA, which are established under statute and mandated to issue legally binding directives within particular trades.

ix) Monitoring, evaluating and reporting procedures

Even though the Institution has a Corporate Plan for the whole institution, formalized action planning covering the whole organization is not available. The Divisions prepare and use action plans independently but there is no uniformity in formats and procedures employed. The effectiveness of monitoring, evaluating and reporting is rather poor. A robust MIS system is deemed necessary.

1. The Sri Lanka Standards Institution (SLSI)

I) The Mandate of the SLSI

The Sri Lanka Standards Institution (SLSI) is the National Standards Body, established by Act No 06 of 1984, for understanding, promoting and facilitating standardization, measurement, Quality Assurance and related activities with a view to upgrading economic growth and industrial development in Sri Lanka.

The Mandate of the SLSI as derived from the Act is as follows:

- (a) to prepare standards on national and international basis relating to structures, commodities, products, materials practices, and operations and from time to time revise, alter and amend the same and promote the general adoption of such standards;
- (b) to promote standardization and quality control in industry and commerce;
- (c) to establish and maintain laboratories, libraries and provide relevant facilities for the purpose of furthering the practice of standardization and quality control;
- (d) to make arrangements or provide facilities for the examination and testing of products, commodities and materials, including food and drugs, locally manufactured or imported, in order to determine whether they comply with the Code of Intellectual Property Act, No. 52 of 1979, or any other written law dealing with standards of quality or otherwise, as well as the examination of processes and practices used in the manufacture of locally produced products, commodities and materials;
- (e) to make arrangements or provide facilities for the testing and calibration of precision instruments, gauges and scientific apparatus, and for the issue of certificates in regard thereto so as to comply with the required standards;
- (f) to provide or arrange facilities for undertaking research in connection with standardization and quality control;
- (g) to operate a certification marks scheme in accordance with the relevant provision of this Act;
- (h) to certify the quality of commodities, materials, produce products and other things whether for local consumption or export;
- (i) to encourage and promote standardization and quality control by educational, consultancy and other means;
- (j) to provide for co-operation with any person, association or organization outside Sri Lanka, having objects similar to those for which the Institution is established;
- (k) to co-ordinate the efforts of producers and users for the improvement of commodities, materials, products, appliances, processes and methods

II) The Vision & Mission Statements

The Vision of the SLSI

To be the premier National Organization providing leadership to uplift the quality of life of the nation, through Standardization and Quality Improvement in all sectors of the economy. The Organization shall be a model of excellence, having a self-motivating Organization culture fulfilling the aspirations of the beneficiaries of its services as well as its employees.

.....Corporate Plan 2009 – 2013

The Mission of the SLSI

To undertake, promote and facilitate Standardization, Measurement, Quality Assurance and related activities in all sectors of the National economy in order to;

- Increase productivity and maximize the utilization of resources;
- Facilitate internal and external trade;
- Achieve socio-economic development;
- Enhance international competitiveness of products and services;
- Safeguard the interests of consumers

Whilst improving the quality of work life of employees of the Institution

.....Corporate Plan 2009 – 2013

III) Sources of Funding

The primary source of funding to meet the recurrent as well as the capital expenditure of the Institution is through internally generated revenue from testing services, projects, consultancies etc. Funds allocated for recurrent expenditure has increased from 2010 to 2012 (2010: Rs. 270.6 M, 2011 Rs. 301.75 M, 2012, Rs. 344.9 M). The allocation for capital expenditure has also increased during this period (2010: Rs. 60 M, 2011 Rs. 103 M, 2012, Rs. 110 M). However, the Institution has not received any Government funding since 2010 (amount received in 2010; Rs. 23,497,000/-). Treasury grants could be sought only for future expansions.

IV) The Context

The views expressed in the report and recommendations therein are made with objective of maximizing the efficiency and output of the Institution under the prevailing constraints, of which some need serious consideration.

The shortage of qualified, competent staff at all levels (i.e., S & T personnel, Technical staff in particular, and supporting staff) is seen as a major drawback in achieving the level of excellence expected / required of an Institution such as this. Of the cadre positions for S & T personnel, 23% (2010), 15% (2011) and 19% (2012) remained unfilled, while the vacancies in the Technical staff category were 27% (2010), 30% (2011) and 32% (2012). The situation was somewhat improved in the Supporting staff category, where only 8% of the cadre remained unfilled as at 2012.

Many divisions faced acute space constraints that have impacted significantly on productivity: It has hindered both the current work performance as well as planned future expansions in services. Furthermore, safety in the work environment has also become an issue now.

As a consequence of space and staff constraints, some testing services are outsourced; a practice that needs to be done with caution.

Although Government funding has not been received since 2010, the Institution is financially self-sufficient in terms of its recurrent expenditure. Of the recurrent allocation, a high percentage is utilized: 90% (2010), 89% (2011), and 98% (2012). In contrast, the capital expenditure vote remains underutilized, with amounts spent being, 35% (2010), 45% (2011) and 20% (2012). Obtaining Government funds for purchase of a land, building purposes etc. would help ease the congestion, and create a more conducive and productive work environment.

2. The Review Procedure

I. The Panel and the Methodology

The performance review was carried out by an independent panel comprised four members, appointed by the National Science and Technology Commission (NASTEC) in consultation with SLSI. The Panel comprised:

Prof. Dr. Rahula Anura Attalage

Chairman of the Panel

Deputy Vice Chancellor, University of Moratuwa, Sri Lanka, Commissioner Public Utilities Commission of Sri Lanka, Former Head, the Department of Mechanical Engineering, University of Moratuwa, Former Chairman, National Institute of Fisheries & Nautical Engineering

Mr. D. Kodagoda

Former Chairman, Sri Lanka Accreditation Board

Mr. H.L.R.W. Madanayake

Former Director, Measurements Unit, Standards and services Department

Prof. Ramanee Wijesekera

Head, Department of Chemistry, University of Colombo

II. Pre Assessment

A number of basic documents were made available to the panel by NASTEC;

- Review Manual – Procedure for Performance Review of S&T Institutions
- The Terms of Reference (TOR) for the Review
- Self-Assessment Report prepared by the SLSI

Following a study of these documents, the panel met on 26th May 2014 for a preliminary discussion to clearly understand the TOR and map out its review activities. Further documents to support the review were requested;

- Corporate Plan of SLSI (2009 – 2013)
- SLSI Act No. 6 of 1984
- Annual Reports of SLSI for the years 2010, 2011 & 2012
- Final reports of a few key projects
- Scheme of Recruitment
- Performance Appraisal Formats

III The Report

Based on the findings, different sections of the report were prepared by team members and collated and finalized based on a series of team meetings and e-mail communications. The final document was prepared by consensus with the agreement of all team members. The opinions expressed and the recommendations made are therefore collectively decided by the panel.

3. Management Assessment

The Institutional level policies, the related goals, objectives and strategic actions decide the manner in which the management and operational practices are carried out at the SLSI. The NASTEC Review Manual stipulates 09 management aspects along with the salient features of each management aspect that are applicable to Science & Technology institutions in general. Falling in line with the guidance provided in the said review manual, the review of the performance of the Institute at the levels of both management and divisions was carried out. This section provides the narration corresponding to each of the 09 aspects stated above together with the details of the relevant appendices. The review team has met the DG, DDG, Directors, SDDs, DDs, Divisional Executives, selected set of stakeholders who directly deal with SLSI, and representatives from the officially recognized trade unions in gathering information for this performance review.

I) Institutional response to external and internal environment in planning organizational strategies

SLSI has a Corporate Plan which is a 05 year rolling plan and it forms the basis for all institutional strategic actions that drives the institution towards its well established mission. The review team was provided with the Corporate Plan of SLSI for the period of 2009-2013. Each division of the institution is expected to derive an Annual Action Plan from the Corporate Plan, for the purpose of establishing the framework for the strategic actions.

The conventional procedure in developing the Corporate Plan is to identify the strategic goals at the top management level in view of meeting the mission set by the institute as per the statutory Act that empowers the SLSI. Then the bottom level divisions would identify their specific strategic actions, on the basis of a comprehensive SWOT analysis that would establish a bottom-up approach based on each division's strengths and weaknesses and that would enable the management to craft a comprehensive framework together with specific, measurable, assignable, realistic and time bound actions. In this exercise the stakeholder consultation will also be an essential and important input to the process. Consequently, each strategic action could be mapped to an appropriate performance indicator that could be used to measure its performance. An annual action plan thus derived will be aligned to the Corporate Plan and will identify the department level specific actions and the relevant resources, both human and other, in order to meet the expected performance on the annual time scale.

During the review process, based on the information gathered, it is noted that the current Corporate Plan has been developed through a disintegrated top-down approach without adequate consultation with divisional levels and also with the direct stakeholders. It is hence noted that the said process is rather of *ad-hoc* nature and not according to standard practices. This was confirmed through the discussions and information gathered from all divisions and also by the selected stakeholders. It is noted that the top management decides the strategic activities as per the institution's mission but lacks consultation with the implementation levels thus not enabling the institution to craft the strategic activities in a meaningful and effective manner in achieving the institutional goals and meeting intended performance levels. This has resulted in lack of ownership of the Corporate Plan and in poor resource planning, in particular, human resource allocation, human resource development including training, acquisition & management of assets, mutual interaction among division for complementing strengths, identification of new areas of expansion to cater to dynamic stakeholder needs and thus not correctly position itself as the apex body of standards to its true potential. At present, action has been initiated to develop the next Corporate Plan and a change in the process as above seems to be taking place.

Recommendations:

- The Corporate Plan development to be done through an integrated approach with an appropriate level of consultation at divisional levels and also with direct stakeholders in view of establishing the strategic actions at divisional levels in achieving the corporate goals set by the top management as per the SLSI's mandate and its proper SWOT analysis.
- Promote stronger interaction with divisional level staff during the development stage of the Corporate Plan enabling infusion of the ownership to the Corporate Plan among all employees which will create a committed culture within the institution ensuring a better cooperation from all concerned for an effective & efficient implementation of actions.
- Adopt the practice of deriving an Annual Action Plan for each division, stemming out of the Corporate Plan, where strategic divisional level actions are planned and whose progress shall be monitored at appropriate intervals relative to the performance indicators established at the planning stage. Subsequently, root causes for not achieving the target performances, if there are any, and suitable actions are thus to be taken to achieve the target performances agreed at institute level.
- Identify a strategic development plan in view of entering into emerging areas of activities analyzing the local stakeholder evolution, of providing opportunities with appropriate leadership to the local industries to enhance their regional competitiveness and of establishing a brand name for the SLSI with regional/global recognition.

II) Planning S & T Programs and Setting Priorities

Each division is expected to carry out planning S & T programs falling in line with the Corporate Plan of the Institution.

The planning of activities within each Division takes place as led by Divisional Head, with representation from all levels within the Division and is expected to identify the required resources. The top management and the other Divisions are kept informed of the expected output and the resource requirement. The top management then prioritizes and decides the manner in which the resources are allocated from an institutional perspective. The review team noted that the planning of S & T programs are carried out merely based on previous year's output/activities but not really on new information/data ascertained in meeting the stakeholder needs, market potential and niche areas considering the national eco system and competitive advantages from a local as well as international perspectives.

The review team is of the opinion that the corporate level planning of S & T programs and prioritization should take into account the eco system dynamics but not only limited to the type 'Business as Usual' relying only on typical activities within the comfort zone. In view of the mission and the mandate of the institution, it is imperative that SLSI plays a leading role in projecting its activities through planning S & T programs of value to the industry, public and as a whole to the country and prioritizing the same. The review team believes that SLSI has not paid adequate attention to this aspect and thus has not used its full potential in meeting its mission.

Recommendations:

- Plan S & T Program related activities within each Division as led by Division Head, with representation from all levels within the Division
- Plan S & T programs based on current information/data ascertained in meeting the stakeholder needs, market potential and niche areas considering the national eco system and competitive advantages from a local as well as international perspectives but not only on merely previous years data/information
- Prioritize the S & T programs considering the externalities and their value to the industry and public as a whole

III) Planning of S & T Projects and R & D

The mission of SLSI mandates the Institution to carry out Research & Development activities thereby bringing in benefits to the general public and the country as a whole.

However, during the review process, the review panel noted that there was no evidence at all supporting this endeavor in the present portfolio of activities. Furthermore, it is also noted that there is no evidence in the Corporate Plan to indicate that this activity would be envisaged in the Institution's future endeavors.

The review team is of the opinion that R & D activities are important to the SLSI for the Institution to understand the evolution of the macroscopic platform of the related activities, to be on par with their international trends and to infuse innovation enabling entry into niche areas. The review team would like to highlight, in particular, the potential of R & D activities in the divisions of Standardization, Metrology, Testing Laboratories and Quality Control.

Recommendations:

- Initiate actions to develop a plan of R & D on an immediate term time frame for the divisions of Standardization, Metrology, Testing Laboratories and Quality Control.
- Initiate actions to identify potential areas of R & D on a long-term basis.
- Incorporate the aspect of R & D into corporate planning and establish a roadmap to create an effective platform of implementation.

IV) Activity management & maintenance of quality

The review focused on the general management aspects of the institution when carrying out day-to-day activities as SLSI is not currently involved in R & D activities, in a true sense.

The Corporate Plan corresponding to the period under review covers from years 2009 to 2013. It is noted that a top-down approach has been followed in the process of establishing this Corporate Plan. Consequently, some divisions appear not to have a proper understanding of the corporate

objectives. There is no clear evidence to show that the divisional level activities have been derived from an Annual Action Plan stemming out of the institution's Corporate Plan. It is reported that the senior management meetings are held to review progress of divisional activities on a monthly basis. It is also revealed that most divisions do not conduct formal meetings to review the progress of their divisional activities with respect to their Annual Action Plans. Minutes of such meetings are not available in many divisions. The explicit application of the PDCA (Plan-Do-Check-Act) approach is not visible.

SLSI is mandated and its mission stipulates corporate goals leading to many activities that contribute positively towards the national economy. Therefore, it is important to conduct its activities in a productive, effective, efficient and transparent manner in line with the set mission. It is also reported that there is no proper information management system (MIS) established yet at the SLSI. This has adversely affected the effectiveness and efficiency of all operations as well as coordination of various activities, the management of activities in particular, where there is huge interdependence.

With the present focus of the top management on the financial perspective, the Institution places much emphasis on income generation. Whilst recognizing the importance of generating income so that the institution could operate independently on a self financed business plan, fulfilling the expectation of its stakeholders should also be given due priority. The meeting of the review team with a group of key stakeholders revealed that the Institution has not paid adequate attention to meeting the requirement of some of its key stakeholders, which in the opinion of the review team is a major deficiency. It is also a failure in meeting its obligations as per its own mission. The review team notes the inability of the SLSI's management to strike an optimum trade-off between emphasis on income generation and activities targeting achieving key corporate goals.

Some of the related concerns of SLSI's key stakeholders are:

- Undue delays in import inspection due to issues on testing
- Lack of an effective arrangement for the operation of import inspection scheme with proper feedback ascertained from import inspection division
- Absence of having a single-point location to handle sampling and related tasks for the convenience of the importer with regard to obtaining the necessary approval etc
- Absence of a sampling facility for import inspection
- Dissatisfaction on the efficiency of the operation of product certification scheme
- Undue delays in product testing in the material testing laboratories
- Absence of a system to communicate information to relevant customers

Furthermore, it is also reported that due to the inadequate capacity to handle samples resulting from various issues in the testing laboratories, some samples are outsourced for test reports to laboratories which are competitors of SLSI. Even though this has a positive effect from the income perspective of the institution, it is necessary to ensure the competency, confidentiality, integrity and transparency of the outsourced laboratories to the satisfaction of the stakeholders with a proper benchmarking.

During the review process it was noted that several divisions have implemented an internal quality assurance procedure through an established quality framework that works appropriately. As per the institution's mission it is expected that the institution evolves as a quality certified establishment. Thus, the top management should very seriously take this aspect into consideration and should develop a robust internal quality assurance mechanism in endeavoring to reach the status of a globally accepted quality certified institute.

The calibration and testing requires, apart from assignment of error and uncertainty of standards, a mechanism for ensuring that the drifts of error and uncertainties are within acceptable limits. These are achieved by consistent IQA practices, EQA practices and PT. Both IQA and EQA have to be arranged by SLSI. The accreditation bodies will ensure that the mechanism is in place. For external checks SLSI can make arrangements with other accredited laboratories or the National Measurements Institution. No such arrangements are apparent for EQA programs at present.

Recommendations:

- Emphasize the need of the Corporate Plan and promote actions to enhance its ownership and visibility among relevant stakeholders for the efficient & effective implementation of the Corporate Plan.
- Ensure proper involvement of the staff at all levels when Annual Action Plans are developed for achieving the set objective of the divisions. Ownership of the action plans lead to better cooperation and commitment for effective implementation of actions stipulated in the plans.
- Strengthen the procedure of continuous monitoring of the Annual Action Plans of the divisions relative to the stipulated performance indicators with emphasis on the PDCA approach in management.
- Ensure that a Management Information System (MIS) encompassing the entire institution is established with networking connecting all divisions of SLSI with a suitable service providing mechanism for its sustainable, efficient and flawless operation.
- Provide short term solutions and an appropriate long term strategy to address space problem of the laboratories. Establish an efficient sample disposal method for the materials and electrical laboratories, in particular
- Establish a laboratory instrument maintenance section with the appointment of an experienced electronics/instrument maintenance engineer in charge of the unit.
- Expedite actions to obtain accreditation of the materials, textiles and electrical laboratories as at present only Food, Chemical, Microbiology and Metrology laboratories have obtained accreditation from SLAB.
- Obtain accreditation for the product certification division. This would help the institution to overcome the dissatisfaction of their customers who are SLS certified and who are expecting a more efficient and transparent service.

- Calibrate measuring equipment traceable to National measurements Standards and take action to participate in PT programs.
- Obtain ISO9001 certification for all divisions of the institution except the Laboratory and Metrology divisions.
- Hold regular stakeholder meetings to ascertain their feedback, discuss their grievances and thereby to improve the services provided to them.
- Investigate the possibility of outsourcing testing only to accredited laboratories. When such laboratories are not available a process should be introduced to assess the laboratories for registration with the institution until they obtain accreditation within a reasonable period of time.

V) Human Resource Management

There is no clear evidence indicating that the SLSI Corporate Plan has considered any strategic actions for human resource management through their SWOT analysis. A number of issues related to human resource management such as high turnover of trained and technical staff, recruitment procedures which cause undue delays, salary grievances and insufficient human resource development activities have been highlighted to the review team. However, the review committee noted that there is no significant staff turnover issue. Objectives, strategies or measures and responsibilities pertaining to the human resource management are not included in the present Corporate Plan. This has a negative impact on human resource management of the institution.

Timely recruitment, development & mobilization of capacity of key personnel required for implementation of strategies for achieving the goals of the Corporate Plan are critical for the excellent performance of any organization. Therefore, it is necessary to very clearly establish the recruitment procedure and implement it in a transparent manner. Transparency of promotion and placement process is equally important for the motivation of the employees which will have a direct effect on the institutional performance. The review team noted the disappointment and dissatisfaction of a majority of the unions on this aspect.

There is evidence to conclude that there had been notable delays in recruitment at SLSI in the recent past. This could be due to the time taken to negotiate the requirements of the SOR with the DMS. It is also noted that in the scientific, engineering and technical fields, more than 20% of the vacancies have not been filled during the past 5 years. Even though the SOR has been approved in October 2010, this figure remains the same even at present. It is a staggering value of 45% in the case of Management Assistant Technical with regard to this aspect. Most of the technical staff involved in testing and sampling attached to the laboratory and quality assurance divisions are in this category.

The review team noted that the staff training is conducted in an *ad-hoc* manner. There is no annual training plan based on the skill & competence requirements of the staff from an institutional perspective. Instead, training opportunities that come across from external agencies are made use of if relevant. This is an inward looking approach that deteriorates the potential of the staff. Specialized

training to develop expertise within the institution is not considered to be necessary for the scientific / engineering / technical staff as they are required to be engaged in various activities. For example, officers from all divisions are drawn in for auditing and training activities whenever necessary. Though this is unavoidable for an institution of the nature of SLSI, not developing its own expertise in certain areas affect the overall performance of the institution. A typical example is the lack of expertise in laboratory equipment maintenance resulting in several testing equipment lying around without being repaired occupying the valuable laboratory space.

The review team also noted that drawing staff from different divisions to carry out work in other divisions could affect the productivity and performance of their own divisions.

The policy of rotating the employees among the divisions of the institution has also apparently induced a negative effect on the aspect of developing the expertise within the organization. The review team is of the opinion that it may be useful to expose the newly recruited officers to all activities in the organization but continuing with this policy at the levels of SDD and above may retard the development of expertise and reduce these officers to mere coordinators/facilitators. Furthermore, opportunities for postgraduate education and professional charter where applicable would be an essential feature in enhancing the professional outlook of the institution and it would also motivate individual officers in terms of their career ambition and prospects.

The Executive Staff performance appraisal process being used at present is the one that had been developed and implemented a long time ago. With the modern methods available for performance appraisal, it is necessary to revisit the said process for improvement. The review team noted that an initiative has been taken in this regard with the introduction of the balance score card method. All incentives payable to the staff are tied to income generated by the institution as a whole. Though income generation is important, the quality, productivity, team work and attitudes are essential features for good performance of officers and thus for the institution.

The review team is of the opinion that the institution has provided a satisfactory welfare scheme to all its employees notably a life and medical insurance scheme.

Recommendations:

- Place more emphasis on human resource management when developing the next corporate plan with relevant objectives, strategies, measures and targets to be set for human resource management
- Streamline the recruitment process and implement the same in a consistent manner.
- Develop an annual training plan based on the competence requirements of the staff in order to carry out activities achieving corporate goals
- Study the specialized expertise requirements of the institution and make arrangements either to recruit or provide capacity building opportunities to the existing staff to be specialized in the selected areas.
- Re-visit the transfer/rotation policy, especially with respect to categories at the level of SDD and above.

- Develop a process for engineers to be able to obtain recognition for the charter while engaged in the activities of SLSI.
- Improve and implement a performance appraisal scheme compatible with modern best practiced schemes available. Appraisal scheme should assist and motivate individuals to develop their skills and motivate them towards improved performance.
- Investigate the effect of engaging officers in various activities on their basic responsibilities to the division to which they are attached. A system of balancing may be introduced
- Create an environment conducive and motivating innovation

VI) Management of Organizational Assets

A well-qualified and dedicated staff with expertise in the relevant areas, well-equipped laboratories and a supporting infrastructure would be mandatory to successfully execute the duties of the SLSI stemming out of its Corporate Plan.

Staff

The SLSI has been reasonably successful in retaining staff. Consequently, the knowledge base of its staff and their experience thus conserved can be considered as an asset to the Institution, and contribute in a big way to its successful functioning. However, the Institution remains understaffed almost at all levels, over the review period, from 2010 – 2012 (levels of 2010: 25%; 2011: 24%; 2012: 17% understaff). The recruitment process for Administrative Staff has had positive results as seen by the significant decrease in vacancies over the three year period (levels of 2010: 71%; 2011: 69%; 2012: 08%). However, the review team notes with concern that of the approved cadre positions for the S & T personnel and Technical Staff, 19% and 32% respectively remain unfilled as of 2012. This situation has a significant bearing on the productivity and output of the organization, particularly in the context of the continuously increasing workload. The backlog resulting in delays in issuing of reports and outsourcing of sample analysis have created a somewhat negative image of the Institution among its stakeholders.

It was evident that the practice of 'rotation' of senior staff among the Divisions was not looked upon favourably by many with whom the review team had meetings/discussions. During the discussions with the Engineers Association, it was evident that the senior staff was unhappy and de-motivated that Director / Engineering & Scientific Division was not an engineer.

Physical assets

It was reported that the buildings are on the whole well maintained and an internal technical committee is responsible for managing the electricity and water consumption of the Institution. However, the results of the effect of this exercise are not brought to the notice of the general staff and had a very low level of visibility, thus being less effective.

The majority of the equipment is in good working order and is calibrated regularly, in-house (Exception: Electrical testing laboratory - calibration is done by ITI). However, the committee noted

that some of the critical equipment is not in working order (example, helmet testing apparatus, PVC water pipe hydraulic pressure tester, coordinate measuring machine) and needs urgent attention in assessing its present status and taking corrective action. The equipment in a given Division is generally used exclusively by the Division (Exception: Textile & Electrical testing laboratories share their equipment). Government procedures are followed by the SLSI in the purchase of equipment. In view of the planned expansion and diversification in the testing services of many Divisions, it is noted that purchasing of 'new' equipment is in progress. It is imperative that the purchase procedures take place without undue delays. It was also noted that while general laboratory equipment not in working order was repaired by the workshop and the maintenance unit of the Institution, the repairs of more specialized equipment was outsourced, resulting in long delays.

Although some of the vehicles in use are owned outright by the Institution, leasing / hiring of vehicles when the need arises, has been found to be a more economical and viable option. However, these thrifty measures have adversely affected the smooth functioning and productivity of some of the Divisions, e.g. Quality Assurance Division. The transport division should look into a more effective planning mechanism in this regard.

The prevailing acute space constraint in many Divisions was noted with concern by the review team, and in particular, the Materials & Electrical testing laboratories require urgent attention in this regard. The congestion in these laboratories is a far cry from a conducive working environment and moreover, the consequent grave safety issue cannot be over emphasized. The disposal mechanism in operation for 'tested samples' and broken equipment is grossly inadequate and compounds the space issue.

Funds

Prior to 2010, SLSI was funded primarily through the Government grants. The Institution is now self-sufficient in terms of funding (except for a capital allocation for special purchases), with a steady income generation over the review period: Rs 343.63 million (2010), Rs. 384.8 million (2011), Rs. 484.4 million (2012). Approximately 70 – 80 % of the generated funds are utilized to upgrade the infrastructure and facilities of the Institution. Of the generated funds, on average, about 9% is utilized as capital expenditure.

Recommendations:

- Take remedial action to address the issue of unfilled cadre positions of certain staff categories (i.e. S & T personnel and technical staff) in order to reach the optimum level of efficiency in the relevant divisions
- Provide specialized training to staff in the in-house workshop / maintenance unit of the Institution or to recruit qualified, experienced personnel in order to minimize the outsourcing of repairs to instruments and undue delays related to these.
- Re-visit the existing mechanism for disposal of 'tested goods' in view of incorporating suitable changes to them.
- Look for an innovative solution to the prevailing acute space problem.

VII) Coordinating and Integrating the internal functions / units / activities

Each division is expected to function efficiently and also interact effectively with other relevant divisions in order to achieve the goals set out in the Corporate Plan of the Institution.

It is noted that the roles and primary functions of the respective Divisions of the Institution are well defined. The coordination of activities within many Divisions is seen as satisfactory and takes place either through 'formal' monthly meetings chaired by Division Head, with representation from all levels within the Division, with minutes of meetings maintained; or 'informal' meeting chaired by the Division Head but where minutes of meetings are not maintained. In certain Divisions, the meetings take the form of discussions between Division Head and relevant staff officers as and when the need arises. The top management and the other Divisions are kept informed of the outcomes and key issues of each Division through formal monthly 'Management meetings' chaired by the Director General. Even though there is no explicit Annual Action Plan drawn up by many Divisions at the beginning of the year, each Division is expected to provide the management with a monthly progress report. This process is expected to provide an effective and regular means of monitoring the performance of the Division. Transparency in terms of finances is also to be ensured. However, the committee noted that many Divisions did not have any evidence to show adherence to this process.

At present, the test results and data generated by each unit / Division is maintained by the respective unit / Division either electronically or / and hard copy (data entry books). The data can be accessed only by the senior staff of the respective Division but on request, any data required is made available to other Divisions. The procedure is thus both labour intensive, time consuming and inefficient. The ability to readily access data when required would contribute positively to enhance the output efficiency, and tangible benefits to the SLSI can be envisaged. In this context, a robust, well designed, Management Information System (MIS) is a '*sine qua non*' for an Institution of this nature. However, maintaining the confidentiality of test results / data should also be a prime consideration when implementing such a system.

Recommendations:

- Establish annual action plans for each division with key performance indicators (KPI) and monitoring of activities should take place with respect these KPI with the Top Management. Corrective actions should be taken to minimize the discrepancies with the targets enabling the corporate goals to be met.
- Establish a framework to hold 'Formal' meetings on a regular basis by the Divisions, and to have minutes of these meetings made available for the monthly 'Management meetings' for proper monitoring.
- Establish a well-designed MIS to streamline and centralize access to information / test data among the relevant Divisions / within the Institution with a suitable institutional mechanism to maintain the same.

VIII) Partnership in managing information dissemination

The mandate of the Institution is clearly defined by the Section 3 of the SLSI Act and one of the key avenues of attempt is to achieve it through gathering of information on the present status of the Standardization in Sri Lanka, needs and aspirations of the general public, industry, trade, health and safety aspects. Ensuring International compatibility through information sharing with partners is an important factor.

The review team notes that it is essential to be sensitive to the dynamics of the eco system and also be able to compare the present situation in the country with that of requirements of the international market. Thus, there is a need to acquire information from sources external to the country as well as from internal sources. In most cases, information collected from the internal sources for different purposes may not be in a compatible format. It may also become a necessity to carry out sample surveys to validate available data. The review team did not come across, an organized statistical team with required specialization within the institution. Since the Metrology Services Division, the Laboratory Services Division and Standards formulation too depend on statistical methods, the review team is of the opinion that it may be prudent to strengthen the in-house capability of dealing with statistical methods.

In order to facilitate, plan and execute Standardization activities and also to carryout necessary supporting activities, various forms of data have to be made available. When such data is not available there has to be an internal facility to find alternative data sources.

Thus, it may be concluded that to formulate Standards, and to carryout training and certification tasks it is necessary to develop guidelines, which would require a dependable information inflow.

It appears that various service divisions such as Laboratory Services Division, Metrology Services Division and Certification Division do have statistical data pertaining to their clients enabling a swift and a better service. The data pertaining to the country as a whole is not available and the SLSI cliental cannot be regarded as a representative sample of the country as a whole. The Marketing and Promotions Division, which in normal circumstances, may be mandated with this task, needs improvements in staff levels, training in various aspects of designing surveys, data collection, evaluations and recommendations to the higher-levels. The review team recognized the fact that improvements to the Marketing and Promotions Division or making alternative arrangements would require time and looked at other issues that impinge on information inflow.

It is noted that the number of responses from the public for proposals for New Standards is disappointing. Similarly, the number of responses from the public at public comments stage of standards formulation is also found to be low. While appreciating the efforts by the Institution to carry the message of Standardization to general public, it must be noted that the only opportunity for the public to participate in the process is by responding to call for proposals and by offering public comments. It is recommended that SLSI should look into the effectiveness of call for proposals and comments. The process of acquiring draft standard to study prior to submission may be felt too cumbersome.

The standards published by the institution, guides and aids for training form the primary Information outputs and promotional literature and pamphlets and other informal publications form the secondary information outflow. It was noted that Sinhala and Tamil versions of Standards are not available.

The Standardization Process requires expertise from many fields, both from academic knowledge as well as practical expertise generated by hands-on real world activities. The working committees provide the core pool of experts. However, it is not practical to include all the experts that might be required in a working committee. One of the methods used in such circumstances is to get the help from organizations that might have the expertise and willingness to share expertise. To enable this possibility it is advisable to create strong links with suitable organizations which might be from Public or Private sector, Universities, Professional bodies (such as SLIE, SLIA, SLIP, and IChemC). These organizations are generally referred to as “Key Partners”.

The group of key partners should include the Research Laboratories established for specific narrow fields, such as TRI, and mandated to issue trade related guidelines and various authorities, such as UDA, which are established under statute and mandated to issue legally binding directives within particular trades. These institutions and SLSI have to work together so that their directives do not contradict already existing Standards and where no standards exist the directives issued by the Authorities should conform to general guidelines on standard formulation and their directives can be absorbed in to Standards without conflict.

One of the major problems faced by any institution working with a large number of assorted institutions and individuals is the delay of response and at times non-response. By appointing liaisons officers, who can be directly contacted by an Institution and *vice-versa* and using email based correspondence for this purpose, the operational delays and lapses may be reduced.

Although section 3f of the SLSI Act mandates providing or facilitating Research, hardly any R&D work is carried out by the Institution. The major technical outputs are the Standards published, Training programs and the information on the website. The non-availability of Sinhala and Tamil versions of standards is a major drawback. It affects the effectiveness of the Standardization program among the SME sector.

The website maintained by SLSI is accessible and user friendly. It has a direct link to “Prabasvara” the website maintained by Vidatha Program. However the Sinhala version is unfinished and the Tamil version is non existent. This too should be remedied.

The institution has strong links with Vidatha Program and participates in activities presented by it. This forms an important outlet enabling spreading the message of standardization among the general public.

No effective Feedback mechanism from Stakeholders was noticed.

Recommendations :

- Establish a Statistical unit with required specialization to provide assistance to all statistical related services of the institute
- Carry out improvements to the Marketing and Promotions Division by realigning its aims and strengthening its staff by appropriate training in Marketing
- Recognizing “Key Partners” and establishing a network of contacts in them for fast, direct and effective communications
- Improve the Sinhala version of the website and establish its Tamil version

- Initiate steps to translate standards to Sinhala and Tamil and until they are available short extracts on the Standards in Sinhala and Tamil to be made available on the web so that SME sector can appreciate and select the standards that their industries need
- Look into the effectiveness of call for proposals and comments from the public

ix) Monitoring, evaluating and reporting procedures

It was noted by the review team that while the Institution has a Corporate Plan for the whole Institution, a formalized action planning covering the whole organization is not available. The divisions prepare and use action plans independently. There is no uniformity in formats and procedures employed. As a result, the effectiveness of monitoring, evaluating and reporting is rather poor. This aspect need to be revisited by the management.

The financial division keeps a track of income and expenditure and conforms to the treasury requirements on data and the time frames set by treasury for reporting.

There is no Management information system functioning at present. It is urged that MIS be established early.

As the Institution does not carry out any research and development activities, there is hardly any material to be published.

There is no participation by External Stakeholders in M&E and the M&E activity itself is disorganized. It must be appreciated that M&E results may be used very effectively in future planning / decision making

Recommendations:

- Infuse uniformity into formulation of Annual Action Plans to ensure consistent process of strategic planning.
- Restructure Monitoring, evaluating and reporting procedures together with a well maintained MIS system
- Incorporate the M&E Procedures into Quality manuals of divisions with Quality System accreditations
- Bring all divisions under quality system accreditation/certification so that all divisions will be under surveillance for maintenance of a quality system as relevant
- Revisit the policy regarding R&D activities in view of reorienting the institute around this aspect

4. Output Assessment

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Laboratory	Number of quality systems developed for the laboratory	06	06	06	04	04	04
	Number of tests accredited	16	20	24	74	72	78
	Number of staff members trained on laboratory accreditation	16	20	24	1	1	1
	Number of internal test reports issued	2600	2600	2800	7642	9962	9066
	Number of external test reports issued	1700	1800	2000	1386	859	1199
	When test reports issued taken together	4300	4400	4800	9028	10821	10265
Performance Judgement of the Division: Satisfactory							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Marketing & promotion	Number of establishments that participated at the promotion of NQA program	11	13	15	33	36	23
	Number of news releases	07	09	12	08	15	13
	Number of leaflets prepared and distributed	03	03	05	03	03	03
	Number of complaints received and attended to	Resolve all complaints received in a satisfactory manner			12	03	08
Performance Judgment of the Division: Good							

DIVISION	ITEM	CORPORATE PLAN					
		TARGET			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Documentation and Information	Number of standards translated to official languages	As requested/identified			05	02	04
	Number of standards to be sold/sold	3500	3700	4000	3957	3933	4359
	Number of library publications (under achievements new books purchased are indicated)	Acquire resources for all information needs			130	130	222
	Number of documents converted to electronic form	All SL Standards & regulations			All SL Standards (2259)		
	Number of information bulletins	05	06	08	04	04	04
	Number of data bases developed and maintained	All data base updates			04	04	04
	Number of international standards promoted for use	Inform chambers, Uni., Other libraries, tech. divisions of SLSI			12	12	12
	Availability of intranet for sharing information	Disseminate information			Doc. server available		
Performance Judgment of the Division: Satisfactory							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Training	Number of standards printed	Print on demand			•	•	667
	Number of training programs developed for top management	04	05	06	02	1	03
	Number of persons trained under above	90	100	120	80	1	91
	Number of training programs developed for middle management and supervisory levels	06	07	10	1	1	02
	Number of personnel trained under above	120	140	160	1	1	45
	Number of training programs developed for shop-floor level staff	07	08	10	01	1	1
	Number of personnel trained under above	150	150	120	12	1	1
	Number of technology related training programs developed for industry/service	06	07	10	01	1	1
	Number of personnel trained under above	150	180	250	16	1	1
	Number of distance learning programs developed	03	04	06	02	1	1
	Number of personnel trained under above	40	40	50	02	1	1
	Number of programs conducted for SLSI staff	12	14	16	1	1	01
	Number of SLSI personnel trained	100	100	120	06	16	37
Performance Judgment of the Division: Poor							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Product Certification	Number of new permits issued for local manufacturers	50	55	70	43	83	78
	Number of new products taken in to the SLS scheme	06	06	08	02	02	01
	Number of factory inspections carried out	300	350	375	219	207	212
	Number of new permits issued for overseas manufacturers	14	16	20	14	15	25
	Number of certificates issued for Sri Lanka Tea	25	35	45	08	02	01
Performance Judgment of the Division: Poor							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2010	2011	2013	2011	2012	2013
Quality Assurance	Number of product categories under import inspection scheme (cumulative)	106	106	110	103	103	103
	Number of overseas suppliers registered under import inspection scheme (cumulative)	60	65	68	30	32	25
	Number of overseas laboratories registered	08	10	12	-	11	11
	Number of consignments cleared under import inspection scheme	13,200	14,000	16,000	12,487	11,789	12,517
	Number of inspections of fishery processing establishments	50	60	65	22	14	11
Performance Judgment of the Division: Poor							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Metrology	Participation in APMP PT programs with the field	Temp. (SPRT)	Length (Gauge block)	Temp. Thermocouple			
	Number of links established with NMIs with fields	SPRT (MUSSD) Mass (20 kg)	Force (2000 kN)	Mass (50 kg)	Mass Temp.	Mass Temp.	Mass Force Temp.
	Number of new calibrations with fields	Dial gauge micrometer Venire caliper Micro-pipettes (Variable volume) DC Voltage (10 V) DC Resistance (400 ohm)	Height gauge Hydraulic pressure gauge	DC Current	Mass & Volume Temp.	Mass & Volume Temp.	Mass & Volume Temp. (02)
	Number of calibrations carried out	2600	2700	2800	2962	3504	3680
	Number of training programs on calibration carried out to the industry	02	03	04	02	02	02
	Performance Judgment of the Division: Good						

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Scientific Standards	Number of surveys carried out for prioritizing	01	-	-	-	-	-
	Number of standards formulated	25	20	30	12	07	09
	Number of ISO/IEC Standards adopted	20	15	30	76	14	30
	Number of standards reviewed	30	30	35	-	22	39
	Number of standards revised	15	15	20	35	14	40
	Seminars, workshops and other programs conducted to promote national standards	11	13	15	01	02	02
Performance Judgment of the Division: Poor							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
Engineering Standards	Number of surveys carried out for prioritizing	01	-	-	-	-	-
	Number of standards formulated	10	10	20	10	02	08
	Number of ISO/IEC Standards adopted	10	10	18	22	20	47
	Number of standards reviewed	10	10	15	05	03	08
	Number of standards revised	10	10	15	08	02	06
	Seminars, workshops and other programs conducted to promote national standards	11	13	15	-	01	02
Performance Judgment of the Division: Poor							

DIVISION	ITEM	CORPORATE PLAN					
		TARGETS			ACHIEVEMENTS		
		2011	2012	2013	2011	2012	2013
System Certification	Number of ISO 9000 registrations (cumulative)	280	290	310	190	246	278
	Number of ISO 9000 surveillance audits	285	295	300	132	218	231
	Number of ISO 14000 registrations (cumulative)	60	70	75	40	44	50
	Number of ISO 14000 surveillance audits	50	60	75	35	36	42
	Number of industry scope sectors accredited	23	25	30	17	18	19
	Number of HACCP certificates (cumulative)	80	85	95	43	53	65
	Number of ISO 22000 certificates(cumulative)	80	100	110	39	44	53
	Number of surveillance audits for above	80	100	110	46	56	65
	Number of GMP certificates (cumulative)	75	100	110	30	42	55
	Number of surveillance audits under GMP certification	75	100	110	25	36	42
	Number of OHSAS certification (cumulative)	15	20	22	08	10	15
	Number of OHSAS surveillance audits	12	15	17	07	09	10
Performance Judgment of the Division: Poor							

5. Findings and Recommendations

The recommendations provided above for each of the categories under 'Management Assessment' are tabulated below.

Aspect Reviewed	Recommendations
(i) Institutional response to external and internal environment in planning organizational strategies	<p>The corporate plan development to be done through an integrated approach with an appropriate level of consultation at divisional levels and also with direct stakeholders.</p> <p>Promote stronger interaction with divisional level staff during the development stage of the corporate plan.</p> <p>Adopt the practice of deriving an annual action plan for each division, stemming out of the corporate plan.</p> <p>Identify a strategic development plan in view of entering into emerging areas of activities.</p>
(II) Planning S & T Programs and Setting Priorities	<p>Plan S & T Program related activities within each Division led by Division Head, with representation from all levels within the Division.</p> <p>Plan S & T programs based on information/data ascertained in meeting the stakeholder needs, market potential and niche areas.</p> <p>Prioritize the S & T programs considering the externalities and their value to the industry and public as a whole</p>
(III) Planning of S & T Projects and R & D	<p>Initiate actions to develop a plan of R & D on an immediate term time frame for the divisions of standardization, Metrology, Testing Laboratories and Quality Control.</p> <p>Initiate actions to identify potential areas of R & D on a long-term basis.</p> <p>Incorporate the aspect of R & D into corporate planning and establish a roadmap to create an effective platform of implementation.</p>
(IV) Activity management & maintenance of quality	<p>Emphasize the need of the corporate plan and promote actions to enhance its ownership and visibility among relevant stakeholders.</p> <p>Ensure proper involvement of the staff at all levels when annual action plans are developed.</p> <p>Strengthen the procedure of continuous monitoring of the annual action plans of the divisions relative to the stipulated performance indicators with emphasis on the PDCA approach in management.</p> <p>Ensure that a Management Information System (MIS) encompassing the entire institute is established with networking connecting all divisions of SLSI.</p> <p>Provide short term solutions and an appropriate long term strategy to address space problem of the laboratories. Establish an efficient sample disposal</p>

	<p>method for the materials and electrical laboratories in particular</p> <p>Establish a laboratory instrument maintenance section with the appointment of an experienced electronics/instrument maintenance engineer in charge of the unit.</p> <p>Expedite actions to obtain accreditation of the materials, textiles and electrical laboratories.</p> <p>Obtain accreditation for the product certification division.</p> <p>Calibrate measuring equipment traceable to national measurements standards and take action to participate in PT programs.</p> <p>Obtain ISO9001 certification for all divisions of the institution except the Laboratory and Metrology divisions.</p> <p>Hold regular stakeholder meetings to ascertain their feedback, discuss their grievances.</p> <p>Investigate the possibility of outsourcing testing only to accredited laboratories. When such laboratories are not available a process should be introduced to assess the laboratories for registration with the institution until they obtain accreditation within a reasonable period of time.</p>
(V) Human Resource Management	<p>Offer more emphasis for human resource management when developing the next corporate plan.</p> <p>Streamline the recruitment process and implement the same in a consistent manner.</p> <p>Develop an annual training plan based on the competence requirements of the staff.</p> <p>Study the specialized expertise requirements of the institution and make arrangements either to recruit or provide capacity building opportunities to the existing staff to be specialized in the selected areas.</p> <p>Re-visit the transfer/rotation policy, especially with respect to categories at the level of SDD and above.</p> <p>Develop a process for engineers to be able to obtain recognition for the charter while engaged in the activities of SLSI.</p> <p>Improve and implement a performance appraisal scheme compatible with modern best practiced schemes available.</p> <p>Investigate the effect of engaging officers in various activities on their basic responsibilities to the division to which they are attached. A system of balancing may be introduced</p> <p>Create an environment conducive and motivating innovation</p>

(VI) Management of Organizational Assets	<p>Take remedial action to address the issue of unfilled cadre positions of certain staff categories (i.e. S & T personnel and technical staff)</p> <p>Provide specialized training to staff in the in-house workshop / maintenance unit of the Institution or to recruit qualified, experienced personnel.</p> <p>Re-visit the existing mechanism for disposal of 'tested goods' in view of incorporating suitable changes to them.</p> <p>Look for an innovative solution to the prevailing acute space problem.</p>
(VII) Coordinating and Integrating the internal functions / units / activities	<p>Establish annual action plans for each division with key performance indicators (KPI).</p> <p>Establish a framework to hold 'Formal' meetings on regular basis by the Divisions, and to have minutes of these meetings made available for the monthly 'Management meetings' for proper monitoring.</p> <p>Establish a well-designed MIS to streamline and centralize access to information / test data among the relevant Divisions / within the Institution with a suitable institutional mechanism to maintain the same.</p>
(VIII) Partnership in managing information dissemination	<p>Establish a Statistical unit with required specialization to provide assistance to all statistical related services of the institute</p> <p>Carry out improvements to the Marketing and Promotions Division by realigning its aims and strengthening its staff by appropriate training in Marketing</p> <p>Recognizing "Key Partners" and establishing a network of contacts in them for fast, direct and effective communications</p> <p>Improve the Sinhala version of the website and establish its Tamil version</p> <p>Initiate steps to translate standards to Sinhala and Tamil and until they are available short extracts on the Standards in Sinhala and Tamil to be made available on the web.</p> <p>Look into the effectiveness of call for proposals and comments from the public</p>
(ix) Monitoring, evaluating and reporting procedures	<p>Infuse uniformity into formulation of annual action plans to ensure consistent process of strategic planning.</p> <p>Restructure Monitoring, evaluating and reporting procedures together with a well maintained MIS system</p> <p>Incorporate the M&E Procedures into Quality manuals of divisions with Quality System accreditations</p> <p>Bring all divisions under quality system accreditation/certification</p> <p>Revisit the policy regarding R&D activities in view of reorienting the institute around this aspect</p>

Appendix 1

Table 1				
(i) Assessment of Institutional Response to External and Internal Environment in Planning Organizational Strategy				
Management practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
Government policies and development goals are used/ considered to establish goals and plan organizational strategy for the institution		X		From a long term perspective the policy frame work as described in “Mahinda Chinthana – Vision for the Future” issued by the Department of National Planning as the Development Policy Frame Work of Government of Sri Lanka should take the precedence. Some of the key thrust areas focused in the government policy notably innovation is not taken into consideration in establishing institutional goals & plans.
The organizational mandate (as specified by the relevant Act) is considered in strategic planning	X			General objects of the institution specified in the section 3 of the Act are adequately considered in strategic planning (except 3f).
The institution is responsive to changes in Government policies and strategies	X			Institution is responsive to concept of self-funding by the Institutions and measures such as Import Inspection and Compulsory Product Certification which are some key aspects from SLSI’s perspective.
Factors such as strengths, weaknesses, threats and opportunities are considered in strategic planning		X		There is evidence to indicate that a SWOT analysis is used for corporate planning. However, it is not indicative whether some of the relevant features therein have been properly considered in strategic planning.
Stakeholders needs are taken into consideration in strategic planning			X	As transpired during the stakeholders meeting the external stakeholder opinion is not considered in strategic planning.

The Board of Governors is involved in strategic planning		X		The council approval is a requirement in all important matters. Thus Council approval is necessary before the Corporate Plan is adopted. However, the extent to which the Council is involved at the preparation stages is not clear.
The extent to which staff members are involved in strategic planning			X	There has not been a proper mechanism to get the involvement of staff members at divisional levels in strategic planning in an effective manner. From the current year, inputs from Divisions are to be comprehensively considered in the Preparation of the Corporate Plan.
Government allocations and alternative funding opportunities (donor funding) are considered in strategic planning	X			As the institution has adopted Self- funded corporate governance framework as per the government direction. No Government fund allocation since year 2010.
The extent to which policies and plans of the organization are reviewed and updated			X	Active and regular Project monitoring, evaluation, review and control (PDCA Cycle) with formalized reporting were not evident.

Table 2

ii) Planning S & T programs and Setting Priorities

Management practice	Level of Practice (Performance Indicators)			Comments/Evidence
	Strong	Moderate	Weak	
National development goals are considered in planning programs & setting priorities			X	There is no evidence of having a mechanism to consider national development goals and setting priorities when planning programmes.
Board of Governors participate in planning and priority setting of program		X		The Board approval is a requirement. However the level of involvement is not clear in program planning and setting their priorities.
The extent to which the staff of the institution participate in program planning and priority setting		X		It appears that the staff of the institution at divisional level participates only to a lower extent in program planning and priority setting, even then, not in a systematic manner.
Stakeholder interests are considered in programme planning			X	Stakeholder interests consideration in program planning is poor. For example inviting public comments at the Formulation of standards and periodic evaluations, are minimal.
The extent to which programmes are planned and approved through appropriate procedures		X		While the institution does not have a composite manual of procedures as required by quality certification systems, it follows a system evolved under the influence of Treasury requirements, Public sector administrative procedures and procedures developed to enable communicating with the Council and the Ministry. The system works, though cumbersome. However, in particular, the Finance division's communications with the Treasury are time framed, thus imposing discipline.
The extent to which the availability of funds(government allocations and other funds)generating funds are taken into consideration in planning programmes		X		The Institution runs, at present, on a self- funding approach. These self-generated funds are taken into consideration in planning programs.
The obtaining of necessary equipment isconsidered in planning programmes.		X		All planning of programs which depends on equipment considers purchase of equipment with a corresponding budgetary allocation.
Stakeholders are represented in the institution'splanning and review committees			X	Stakeholders are not represented in program planning and review committees.

Table 3				
iii) Planning S& T / R & D Projects				
Management practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The staff is provided with guidance for project planning			X	There are many in-service programs. However, the extent to which the staff is provided with guidance for project planning was not evident.
Previous research results/data are used for planning projects			X	Previous data are not used in a scientific manner in planning projects.
The extent to which the institution follows a formal process for preparation, review and approval of projects			X	No evidence available for a formal process of preparation, review and approval.
Multidisciplinary projects/ activities are encouraged by the institutions			X	No evidence available for encouraging multidisciplinary activities.
Foreign collaborations are encouraged and incorporated in planning		X		Participation with foreign collaborators was noted. However, the extent to which they are incorporated at the planning stage is unclear.
Partnership with private sector is encouraged by the institution				Not relevant
The extent to which development research/activities are considered in planning projects			X	No R&D component is envisaged in planning of projects.
The degree to which adverse effects on environment are considered in planning projects		X		The test methods and laboratory practices are based on internationally acceptable standards. In certain instances they are accredited under various bodies. Then this aspect is supposed to be evaluated by the accreditation bodies. However, the fact that most of the divisions have not been under any accreditation, creates a lacuna. This concern may be addressed.

Table 4

iv) Activity management and maintenance of quality

Management practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The effectiveness of the procedures for resource allocation at different levels (organization, departments, program etc.)			X	No evidence of established set of rules or clearly laid down decision making mechanisms for resource allocation at different levels.
Ensuring that instruments, equipment and infrastructure facilities are sufficient for implementation of projects			X	While the inadequacy of equipment is an ever present lament common to all institutes of this nature, evidence of inadequate equipment and infrastructure facilities for implementation of projects is observed.
The effectiveness of administrative procedures and support for project implementation (procurement and distribution of equipment and materials, transport arrangements, etc.)			X	As there are no documented procedures and benchmarks. Many issues reported on delays in procurement, transport arrangements.
Formal monitoring and review processes are used to direct projects towards achievement of objectives.			X	Formal monitoring was not apparent.
The extent to which the researchers are supported by the required technical / field staff				Not relevant
Ensuring that established field / lab methods, and appropriate protocols are used		X		For calibration and testing, accreditation is claimed only for certain laboratories and appropriate protocols are used.
Research projects/ S& T activities are completed within the planned time frame			X	Delays are reported in completing S&T programs.
Ensuring that scientists / researchers have access to adequate scientific information (scientific journals, internet, international databases, advanced research institutes, Universities etc.) that strengthens the quality of research.		X		Adequate for S&T work.
The extent to which quality assurance practices are followed by the institutions		X		Accredited calibration/ testing labs are carrying out internal QA procedures. However participation in PT programs is lacking.
Ensuring that researchers/ scientists have access to computers and necessary software		X		PCs are available mostly as stand-alone installations. Basic software for computer applications is available. However, availability of Intranet and specific software for scientific applications relevant to SLSI work were not evident.

Table 5

v) Human Resource Management

Management Practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The institution maintains and updates staff information in a database (including bio data, disciplines, experience, publications, projects)			X	Data is available. However, SLSI does not maintain a composite computer based MIS Database
The institution, plans and updates its staff recruitments based on programme and project needs		X		Staff recruitments are based on programs and project needs. However, there are delays in obtaining the concurrence of Department of Management Services
The effectiveness of the selection procedures and the scheme of recruitment		X		Recruitments are based on exams and interviews, in some cases, and interviews only, in others. Interview boards contain members from management, external and internal experts. It was noted that the criteria stipulated in SOR has affected recruitment in a negative manner. The procedure for promotions may be revised for clarity and transparency.
Training is based on institution and program objectives and on merit		X		Training is based on institutional goals and objectives, but not executed on a planned and regular basis effectively.
The effectiveness of the procedures in promoting a good working environment and maintaining high staff morale		X		In general terms, the physical working environment appears to be satisfactory. However there are certain laboratories not having conducive working environment. (e.g. Materials and Electrical laboratories)
The effectiveness of rewards and incentive schemes in motivating the staff	X			Incentives appears to be effective as indicated by low staff turnover.
The effectiveness of managing staff turnover, absenteeism and work interruptions	X			The incentive scheme depends on attendance and no work stoppages have occurred in recent times.

Table 6

vi) Management of organizational assets

Management Practices	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The ability of the institution to carry out its mandate and the assigned statutory powers		X		In general no problems became apparent except for few specific issues
Infrastructure(buildings, stations, fields, roads) is satisfactorily maintained.		X		Infrastructure management is satisfactory except for specific cases highlighted in the report. With the demand for Import Inspection and Product Certification increasing due to Govt. Directives, there are acute accommodation problems in Testing Labs. Parking of vehicles is an issue for visitors.
Vehicles and equipment (lab, field, office) are properly managed and maintained			X	Management and maintenance of equipment in laboratories require more attention and improvement.
The effectiveness of procedures to ensure that equipment are in working order			X	The lack of developed expertise internally which can conduct preliminary investigations and advise the management on maintenance of sophisticated equipment may be contributing to long layoffs of equipment.
The effectiveness of the institution's overall strategy in generation and proper utilization of funds	X			The institution generates funds to be self-sufficient. The internal and external auditing systems are functioning properly.
The extent to which the institution identifies opportunities for income generation and cost recovery		X		There is no proactive approach for identifying opportunities for income generation Institution recovers all its expenditure.

Table 7				
vii) Coordinating and integrating the internal functions/ units/activities				
Management Practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The extent to which institution is evaluated internally and restructured based on current needs			X	No evidence of formal & adequate evaluation and restructuring based on current needs
The effectiveness of internal communication and coordination mechanisms		X		There is no smooth flow of information within different divisions.
Institution's overall direction and coordination are provided by a central planning committee / unit.		X		The management system appears to be hierarchical. Overall direction is provided by the Council. Monthly progress review meetings are held by the Management committee.
The extent to which different units are assigned clearly defined functions	X			Functions of various divisions are clearly defined but not on a proper plan as per best practices. Function assignment is satisfactorily.
Effectiveness of using appropriate reporting procedures and feedback in management at different levels		X		Formal reporting procedure is available without an effective feedback and corrective mechanism from the higher management.

Table 8

viii) Partnership in managing information dissemination

Management Practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The institution systematically plans and performs dissemination of information		X		There is dissemination of information though not systematic. The website is informative and can be used without difficulty. More attention should be paid on security aspects of dissemination of standards
The extent to which the institution plans and maintains linkages with key partners for sharing and dissemination of information			X	No adequate evidence.
The effectiveness of institutional procedures for technology transfer				Not applicable.
The effectiveness of the system to obtain feedback from different types of stakeholders			X	No effective system was evident.

Table 9

ix) Monitoring, evaluation and reporting procedures

Management Practice	Level of Practice (Performance Indicators)			Comments /Evidence
	Strong	Moderate	Weak	
The institution monitors and evaluates (M&E) its own activities periodically			X	No evidence of systematic formalized evaluations
M&E is supported by an adequate management information system (MIS), which includes information on projects (e.g. costs, staff, progress, and Results).			X	No proper institutional level integrated MIS is available.
The extent to which S& T results and other outputs are adequately reported internally (e.g. through reports, internal program reviews, seminars)		X		There is an internal Newsletter and an effective Website.
External stakeholders contribute to the M & E process in the institution			X	No formal mechanism for this process.
The extent to which the results of M&E are used for project/ research planning and decision making				As there is no systematic M&E process, this does not take place in a proper manner.

National Science and Technology Commission
External Review of the Sri Lanka Standards Institute
Terms of Reference

Objectives

The Science and Technology Development Act No. 11 of 1994 mandates the National Science and Technology Commission, *inter alia*, to review the progress of Science and Technology Institutions in relation to the Objects set out in section 2 of the Act (see Appendix)

Accordingly, this review is carried out with the Objective of determining the progress of the Sri Lanka Standards Institute (SLSI) in achieving such of these Objects as are relevant to it, to assess the quality, cost effectiveness, relevance, and impact, of the scientific programmes conducted at the Institute, and to ensure that the needs and expectations of the government and other stakeholders are being met to the fullest extent possible.

The review may also serve

- To obtain information on how to improve the activities of the Institution
- To induce self-reflection by the scientists at the Institution on the results and outcomes of S&T activities
- To encourage good management of the Institution
- To improve internal and external transparency
- To recommend future resource commitments
- To gather information for policy change
- To inform stakeholders about the Institute's competencies.

Duties of members of the Review Team

Members of the review team are expected to follow the procedures described in the Review Manual prepared by NASTEC. This includes:

1. Study of the self-assessment report submitted by the SLSI. NASTEC will provide you with a copy of this report. While the review is based on the information contained in this report, it need not be confined to the report.
2. Site visits to the Institute after preliminary discussions with the Director General of SLSI. You may have to examine previously requested documents, and interview relevant officers, in order to gather information necessary to evaluate the institution. Transport will be provided by NASTEC.
3. Meeting with stakeholders of the Institute, in order to determine whether their expectations are being reasonably met by the Institution. The meeting will be set up by NASTEC in consultation with the SLSI
4. Preparation of the draft report and submission of the same to the DG, SLSI, for his comments.
5. Preparation of the final report and submission of the same to NASTEC. After the comments of the DG, SLSI, on factual matters of the draft report have been received and given due consideration, the Chair of the Review Team will be responsible for finalizing the report, in consultation with the other members of the team. The final report will be circulated by NASTEC to all relevant parties.

The draft and final reports should contain assessments of both the management and output of the Institute, covering all areas included in the Review Manual to the extent that they are applicable, and submitted in the format described in page 29 of the Review Manual. The team may use its discretion in dealing with any additional matters not covered by the Review Manual, which in their opinion are relevant and important for purposes of this review. This should be done with proper documentation and justifications.

The members of the team should always bear in mind that, while the review report must address the needs of all concerned parties, such as policy makers, the relevant line Ministry, and the Treasury, its most critical function is to guide the Institution being reviewed towards self-improvement, at the institutional, project, and individual levels. It should be based on the Institution's mandate, and contain constructive criticisms, an unbiased analysis of the findings, and recommendations for improvement.

Appendix

- (a) to promote the use of science and technology as an integral part of the effort to achieve rapid economic development, and improved quality of life and to alleviate poverty, and to involve scientists and technologists in the formulation of policy and in decision making ;
- (b) to foster scientific and technological activity in all its aspects with a view to developing self reliance in

scientific and technological capability and to ensure the allocation of a reasonable proportion of the gross national product for science and technology activities;

- (c) to support the development of indigenous technology wherever feasible whilst promoting the import, adaptation and assimilation of technology for rapid growth in industry agriculture and services;
- (d) to ensure that institutions of higher education and technical education and research institutions produce scientists, technologists and technicians of high caliber and competence and to secure the provision of incentives to them with a view to ensuring their retention in Sri Lanka;
- (e) to provide adequate opportunities for all persons to acquire a basic education in science and its practical applications;
- (f) to cultivate among the people, an appreciation of the value of science, scientific method and technology and of the integral role that science plays in modern society;
- (g) to disseminate the benefits of science and technology activity to all sectors of the people;
- (h) to encourage and strengthen cooperation in science and technology between scientists in Sri Lanka, and between scientists in Sri Lanka and scientists outside Sri Lanka, and to provide access to global scientific and technological knowledge and activity ;
- (i) to develop the capability to continuously plan, evaluate and review strategies, legislation: and the institutional framework for science and technology in Sri Lanka ;
- (j) to identify priority areas of science and technology likely to be of benefit to Sri Lanka and to promote research and development in such areas.