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***Inimical Factors  
Affecting Science and Technology  
Development in Sri Lanka***

***Report of an Expert Study Group appointed  
by the National Science and Technology Commission  
of the Ministry for Economic Reform, Science and Technology***

**NATIONAL SCIENCE AND TECHNOLOGY COMMISSION**



***Report of the Expert Study Group on  
Inimical Factors Affecting Science and Technology  
Development In Sri Lanka***

**National Science and Technology Commission**  
No.2, Galpotta Road,  
Nawala, Rajagiriya

### **EDITORIAL NOTE**

*This document on Inimical Factors Affecting Science and Technology Development in Sri Lanka is based on the deliberations of an Expert Study Group appointed by NASTEC, at the request of Hon. Milinda Moragoda, Minister for Economic Reform, Science and Technology, to identify factors that impede the development of S&T in R&D Institutions and Universities and propose remedial measures to overcome them.*

*The Committee based their deliberations on a number of reports that have been published on the subject, especially the NSF report on 'Solving Problems Encountered in Conducting Scientific Research'.*

*In preparing this material for publication, the NASTEC has edited and paginated the original report of the Expert Study Group giving some attention to the presentation.*

*The mention of specific companies or of their products or brand names, if any does not imply any endorsement or recommendation on the part of the NASTEC or the Ministry for Economic Reform, Science and Technology.*

*The Expert Study Group comprised of:*

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## CONTENTS

<i>Editorial Note</i>	2
<i>The Report</i>	5
<i>Introduction</i>	5
<i>Overseas Travel</i>	5
<i>Approval Procedures</i>	5
<i>Expending Research Funds</i>	6
<i>Procurement Procedures</i>	6
<i>Setting up of a Trust Fund</i>	7
<i>Recruitment and Promotion Procedure</i>	8
<i>Criteria for promotions</i>	8
<i>Remuneration for Scientists</i>	9

# INIMICAL FACTORS AFFECTING SCIENCE AND TECHNOLOGY DEVELOPMENT IN SRI LANKA

## 1. INTRODUCTION

At the request of Hon. Milinda Moragoda, Minister for Economic Reform, Science and Technology, NASTEC appointed an Expert Study Group comprising of seven distinguished scientists and administrators (see Editorial note) to identify factors that affect and impede the development of science and technology in Sri Lankan Universities and R&D Institutions and propose remedial measures to overcome them. The Expert Study Group having met Mr. M.D.D. Peiris, Senior Advisor to the Minister for Economic Reform, Science & Technology and having considered various reports and publications arising from workshops/seminars/conferences on problems encountered by scientists in conducting research, proposed that the initial recommendations should be limited to three specific areas namely, *Overseas travel by scientific personnel, Expending research funds and Recruitment and promotion procedures in R&D institutions and Universities.*

The following are the recommendations of the Study Group which proposes new guidelines and procedures that would encourage and facilitate scientists to carry out research and development activities in their institutions.

## 2. OVERSEAS TRAVEL

The current conditions applying to traveling overseas have been tedious and frustrating. Often participants have obtained approval in the last minute, been delayed or not been able to attend foreign conferences due to these administrative procedures.

### 2.1. Approval Procedures For Foreign Travel

#### 2.1.1. Current Scenario

Every public officer,

- on study or training whether on full pay or no pay
- on a visit or travel grant of a foreign government, international agency or a foreign organization
- on-duty, except on appointment to a Sri Lankan Mission abroad
- as a member of a team representing Sri Lanka in sports
- on a pre-paid passage for travel
- for a purely private purpose eg:- holiday, pilgrimage, medical purposes

should obtain approval from the President/Prime Minister /Minister/Secretary before he /she leaves the country irrespective of the duration of travel

#### 2.1.2. Recommended Scenario

Realizing that appointed Heads of Institutions and Governing Boards are responsible for the management of the institution, every public officer whether on private or official travel:

- Leaving the country for a month or less than a month, should obtain prior approval from the Head of the Institution. (In the case of Heads of Institutions leaving the country, prior approval should be obtained from the Governing Board).
- Leaving the country for less than three months but more than one month, should obtain prior approval from Head of the Institution and the Governing Board. (In the case of Heads of Institutions leaving the country, prior approval should be obtained from the Governing Board as well as the Secretary to the Ministry).
- Leaving the country for more than three months should receive approval from the Minister in charge.

### 3. EXPENDING RESEARCH FUNDS

In Sri Lanka, the unavailability of adequate funds has been the major constraint encountered by Researchers. However, having obtained funds they are faced with many procedural and system generated problems, which result in further delays of conducting effective Scientific Research.

#### 3.1. Procurement procedures for research supplies

Prevailing administrative and financial procedures cause serious delays in procurement of chemicals, biological material, equipment and spares, frustrating researchers and inhibiting their output.

##### 3.1.1. Current Scenario

The rules and procedures for general purchases are applicable to purchase consumable and equipment supplies for research as well. The current scenario is summarized below for purchases up to the value of Rs 20 million.

Value (Rs)	Quotations/Tenders	Evaluation & Recommendation	Approval	
≤ 200,000/=	Written quotations called from registered suppliers	By person concerned ie, Principal Investigator (PI)	Head of Institution	Head of institution has authority to deviate from procedure under urgent and exceptional circumstances.
> 200,000/= up to 20m.	Sealed tenders called from registered suppliers <b>OR</b> open press advertisement, depending on value.	<p>≤3 m: Independent Technical Evaluation Committee (TEC) depending on the item. Minor Tender Board (MTB)</p> <p>&gt;3m up to 20m: Independent TEC depending on the item. Departmental Tender Board</p>	<p>Minor Tender Board and Head of Institution*</p> <p>Department Tender Board (DTB)*</p>	DTB has authority to deviate from procedure under urgent and exceptional circumstances up to 5m value.

\* Payments > 500,000/= must receive the approval of the relevant Minister with the concurrence of the Minister of Planning and Minister of Finance (ref Circular ST/AC/INS/95 of 16/11/95).

#### Composition of Tender Board

##### Departmental Tender Board (DTB)

Head of Institution (Chairman)

Representative from Ministry in charge

Relevant staff officer from the Institution

##### Minor Tender Board (MTB)

Institutions - Senior Staff Officer of Institution (Chairman)

Senior officer from another Institution

Relevant staff officer of the Institution

Universities - the MTB is chaired by the Dean of the Faculty.

Eg, Dean of Faculty (Chairman)

Relevant Head of Dept.

Two other Heads or their representatives

### Emergency purchases

Direct purchases up to 20,000/= can be authorised by Head of Institution under "emergency" situations.

Current procedures are based on -

1. Guidelines on Govt Tender Procedure. Revised Edition - August 1997

2. Circular FIN 358 (5) dated 6/9/2002

#### 3.1.2. Recommended Scenario

Difficulties arise mainly in respect of the need to call for quotations from **all** registered suppliers.

Hence recommended minimum of 3 quotations for purchases up to Rs. 500,000/=, and to allow direct purchase up to Rs. 10,000/=.

Value (Rs)	Quotations/ Tenders	Evaluation & Recommendation	Approval
≤ 10,000/=	-	-	Direct purchase and reimbursement of cost to PI on submission of receipts.
> 10,000/= up to 200,000/=	Written quotations called from minimum of 3 suppliers. Principal Investigator (PI) can call for quotations.	By Principal Investigator	In Institutes – Head of Institution.  In Universities – Dean of Faculty
> 200,000/= up to 500,000/=	Written quotations called from minimum of 3 suppliers. PI can call for quotations.	Minor Tender Board - (Dean + 2)* PI to be one man Technical Evaluation Committee (TEC).	MTB and Head of Institution
≥ 500,000/= up to 3m	Sealed tenders from suppliers <b>OR</b> open press advertisement, depending on value	Independent TEC** MTB	MTB and Head of Institution
> 3m up to 20m	Sealed tenders from suppliers <b>OR</b> open press advertisement, depending on value.	Independent TEC Departmental Tender Board	DTB

\* Dean of Faculty, Head of relevant dept, One "technical member" from same Faculty

\*\*TEC drawn from at least 3 members in the institution including 1 technically competent member from outside.

In special situations where the product/service of one supplier is requested and recommended by the PI with adequate justification, this shall be accepted.

### 3.2. Procedures For Setting up of a Trust fund

Access to funds already received for actual scientific research is a serious constraint encountered by Researchers. Often, the responsible authorities, whether it be the University system or the R&D Institutes under different Ministries, delay in releasing the funds necessary for research. Hence, setting up of individual trust funds complying with the different institutional rules and

regulations have been recommended. The trust should consist of at least three members of the organization inclusive of the Director/Dean.

**3.2.1. Recommended guidelines for a Trust Fund**

1. The two parties (organizations) entering into the agreement should be specified along with the date of agreement and the time frame of agreement. Following this the name of trustees along with their designations should also be specified.
2. The authority, the purpose of the fund, the amount of money/fund to be held by trustees under the Trust Ordinance No 9.of 1917 as amended periodically should be detailed out.

The agreement between the two parties should contain:

1. The Name of trust
2. The Objects of the trust
3. The Board of Trustees and the Chairman of the Board - designations
4. Reasons for vacancies in office of trustees
5. Powers designated, the frequency of meetings, the authority vested in the trust and the quorum per meeting
6. Method for decisions to be taken (majority vote etc)
7. Minutes and Payment of meetings
8. Trust property management - consistency
9. Bank Account - trustee agreed fixed deposit/current account in specified bank/s  
Currency of fund (if foreign funded), and the authorized Personnel to operate account/s
10. Records & Accounts and Auditing of trust
11. Annual statement of income and expenditure and balance
12. Administration and rules of trust
13. Authority of trust in the event the trustees cease to function
14. Signature of trustees and two witnesses in the document " Instrument of Trust"

**4. RECRUITMENT AND PROMOTION PROCEDURES**

The qualification requirements for recruitment to academic posts in Universities and research posts in research and development organizations could remain as already stipulated by the respective institutes, but employment should be tenure-track-tenure (contract) basis. Tenure or permanency in posts should be granted following contractual employment in three tranches, each about 5 years with the initial tranche carrying a probationary period of two years, after which, if the performance is unsatisfactory the appointment could be terminated.

During the first tranche (of 5 years) the employee may be encouraged to undertake postgraduate training should she/he think it necessary. However a postgraduate degree should not be compulsory for career advancement, which should be based on performance to be assessed on scientometric and other appropriate criteria to be determined. A scheme of points such as follows may be used for promotions/extending contract during the first 15 years, after which she/he would be given tenure.

**4.1. Criteria for Promotions**

<b>4.1.1. Scientific Achievements</b>	<b>Marks (maximum)</b>
1. Publications in referred journals cited in the science or other relevant Citation Indexes	25 each
2. Publications in other refereed journals	10 each
3. Publications in proceedings of Seminars/ Workshops/ Conferences and Abstracts of such publications	03 each
4. Books, monographs, chapters of books, Reviews	15 each
5. Other special reports excluding routine (annual/quarterly) reports	01 each
6. Other contributions to S & T – Development of Technology etc. not published, Patents	25 each
7. Securing Research Grants (based on demonstrable competitiveness in securing of such grants)	05 each

8. Master's or PhD thesis			05 marks
For 1.1 – 1.5	Sole author	-	100% marks
	Senior author	-	80% marks
	Co-author	-	60% marks

**4.1.2 Merit Awards (including National Honours)/Outstanding Contributions** **Maximum 50 marks**

1. Awards of recognition (including National Honours)
  2. Outstanding contributions to National development
  3. Exceptional awards at any competition
  4. Postdoctoral fellowship awards
- 1 to 4 will be decreasing order of merit

**4.1.3 Serving on Committees:** **Maximum 10 marks**

1. International Committees/ Boards – 3 marks per position held
2. National Board/ Committees – 1 mark per position held

**4.1.4 Contribution to Teaching & Academic Development** **Maximum 25 marks**

1. Staff development activities
2. Postgraduate supervision
3. Institutional development

**4.1.5 Structured Interview** **Maximum 20 marks**

1. Vision
2. Leadership
3. Interpersonal skills
4. Personality
5. Communication skills

For promotion/extension of contract from one grade/period to another, a minimum mark should be secured as to be decided by the relevant authority. The scheme can be modified to be consistent with the existing grades in research and/or academic institutions.

**4.2. Remuneration for Scientists**

**4.2.1. Incentive Payments**

Although numerous requests have been made to the government for increased salaries and incentives for scientists/academies, it has not materialized, and it is most unlikely that scientific positions will be remunerated better than comparable administrative positions. Therefore, the only tactful option is to seek incentive payments based on output. The Presidential Award Scheme, which entitled payment up to Rs. 200,000 per publication made in a journal cited in the Science Citation Index was one such scheme. The award had to be shared by co-authors. In the event the research is done abroad, the entitlement is only Rs. 50,000 per publication. Unfortunately this scheme has now been defunct, and NASTEC should endeavour to reactivate it.

**4.2.2. Local Stipends**

Making local postgraduate training attractive is vital to the development of a research culture in the Universities. At present the overwhelming temptation is for foreign training, and this is understandable. Moreover, a very high percentage of those who commence local postgraduate training do not complete such training for various reasons. One way to entice local postgraduate training is to provide more attractive stipends; a scheme that will attract trainees and at the same time 'bind' them to complete the training is important. For example a monthly stipend no less than Rs. 25,000/- should be paid. Of this 20% or Rs. 5,000/- should be placed in a joint fixed deposit together with an equivalent amount to be contributed by the granting agency/institution based on a written agreement. The fixed deposit should be encashable only on completion of the postgraduate degree; which with interest at the end of three years, should exceed Rs. 500,000/-, an attractive compulsory saving! For any breach of agreement the grantee will forfeit the deposit.

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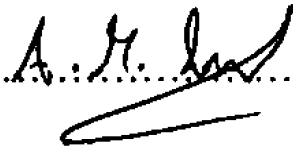
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