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A REPORT ON THE ACTIVITIES OF THE NATIONAL SCIENCE COUNCIL OF  
SRI LANKA IN RELATION TO THE DUTIES ASSIGNED TO IT BY THE  
NATIONAL SCIENCE COUNCIL LAW

National Science Council of Sri Lanka  
47/5, Maitland Place  
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1. The National Science Council of Sri Lanka (NSC) was first constituted under the National Science Council Act No. 9 of 1968, and it was re-constituted under the National Science Council of Sri Lanka, Law No. 36 of 1975.
  
2. The duties of the NSC as prescribed in the NSC Law are as follows:
  1. To advise the Minister on:
    - (a) the application of science and technology for development;
    - (b) the formulation of a science policy;
    - (c) the allocation of funds for scientific and technological research; and
    - (d) any other matters referred to the Council.
  
  2. To initiate, sponsor and support scientific and technological research with the objectives of developing the resources of Sri Lanka, promoting the welfare of the people, and advancing science and technology in general.
  
  3. To collect, disseminate and publish information relating to scientific and technical matters.
  
  4. To maintain liaison with scientists and technologists and scientific and technological institutions in Sri Lanka and in other countries.
  
  5. To study and report on:
    - (a) the effective utilization of the available scientific and technological personnel;
    - (b) the future scientific and technological manpower requirements; and
    - (c) the steps to be taken to provide adequate training facilities to meet future scientific and technological manpower requirements.

6. To take cognizance of and report on subjects of national importance concerning scientific, technological, educational, sociological and economic matters.
7. To do such other things as may be necessary for the development of science and technology in Sri Lanka.

3. For performing its functions which cover a broad spectrum of scientific and technological activity, the NSC draws on the scientific expertise in different institutions in the island, including the universities. Scientists, including those connected with development activities in different state institutions, have been appointed by the Minister to Statutory Working Committees of the NSC for assisting the Council in its activities. Besides the Statutory Working Committees, there are other special committees and specialist panels that work in close association with the NSC. One of these is the Man and the Biosphere National Committee (appointed by the Minister of Education with the concurrence of the Minister of Industries and Scientific Affairs) which coordinates a programme of environmental research.

4. The activities of the NSC during the past two to three years and the future programmes, in relation to the duties prescribed in the NSC Law, are given in this report.

1(a) SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (Advisory & Policy Level)

5. United Nations Conference on Science and Technology for Development -

In 1977, the NSC was nominated the Sri Lanka Focal Point for preparing for the United Nations Conference on Science and Technology for Development (UNCSTD). The main theme of this major world conference which was held in Vienna in August, 1979, was the mobilization of science and technology for the development of the Third World. The main pre-conference work for

the member states was the preparation of national papers. For preparing the Sri Lanka National Paper the NSC convened a number of meetings of specialists drawn from government departments and corporations and the Ministries of Finance and Planning and Plan Implementation to identify the problems relating to the application of science and technology for development in the major sectors of the economy. Circulars were sent to Government Agents for obtaining information on rural development projects. The private sector was also consulted. The draft Sri Lanka National Paper was prepared by the NSC, and this was discussed at a well attended National Workshop in June, 1978. The Sri Lanka National Paper was published in August, 1978, and it was considered to be a very important input for UNCSTD.

#### Future Activities

6. UNCSTD Follow-up Action - The NSC will continue as the Sri Lanka Focal Point for implementing the decisions taken at UNCSTD. This will involve inter alia the preparation of a coordinated programme for strengthening research and development with support from the special fund that will be established following the decision at UNCSTD.
  
7. Rural Technology Programme - The NSC, as the Sri Lanka member of the Commonwealth Science Council (CSC), is functioning as the national coordinator on 20 CSC-sponsored research and development intercountry collaborative projects on rural technology, where Sri Lanka is also a participating country. The projects cover many aspects of rural development (eg. cultivation of medicinal herbs, bio-gas generation, inland fisheries etc.) The local programmes connected with the projects are being carried out by different state institutions in the island. The NSC will continue to function in the role of national coordinator.

8. Alternative Energy - The NSC has formed a committee of experts from different scientific institutions in the island to examine the feasibility of using solar and other alternative forms of energy in Sri Lanka. The recommendations of this committee will be submitted to the Government.
  
9. Fuelwood for domestic use and for light industries - Fuelwood accounts for 60 per cent of the energy used in Sri Lanka. Despite this, the question of fuelwood production and its improved utilization - in open hearth fireplaces only 8 per cent of the heat is used while the rest is wasted - has, up to now, received little or no attention. With the continued aggravation of the world fuel crisis and, more particularly, with kerosene being priced more realistically, the questions of fuelwood production and utilization have assumed national importance. The NSC has summoned a meeting of experts from different state institutions with a view to drawing up an action programme for (a) increasing the efficiency in the use of fuelwood in household cooking and (b) converting wood to charcoal for improved utilization. The NSC will coordinate the activities on this programme.

1 (b) FORMULATION OF SCIENCE POLICY

10. The NSC has constantly stressed the need for a National Science and Technology Policy as being a pre-requisite for the effective application of science and technology for development. The Science Policy Research Committee of the NSC prepared a draft science policy statement which was subsequently ratified by the Council and forwarded to the Government. His Excellency the President accepted this statement and announced it at his inaugural address at the 34 Annual Session of the Sri Lanka Association for the Advancement of Science in December, 1978. The policy statement stresses the importance of building up an endogenous scientific and technological

capability in the country as a sine qua non for the effective application of science and technology for development.

11. The next stage is the implementation of the science policy; and for this to be done, an implementation programme is necessary. The NSC is working on different aspects of the implementation programme, and will be forwarding its proposals from time to time. One report on the post-graduate training of scientists has already been prepared and submitted, and, at present, the question of improving science education in rural schools is being examined.

1 (c) ALLOCATION OF FUNDS FOR SCIENTIFIC AND TECHNOLOGICAL RESEARCH (Advisory and Policy Level)

12. A national survey of the allocation of funds for Research and Development in Sri Lanka was carried out by the NSC in 1977. The results of the survey were published under the title "A Survey of Expenditure on Research and Experimental Development in Sri Lanka, 1966 - 1975". The information contained in this document, which is the first comprehensive work of its kind published in Sri Lanka, should provide guidelines for the increased allocation of funds for scientific and technological work in the different sectors.

Future Activities

13. The NSC's role in advising the Government on the allocation of funds for scientific and technological research will assume greater importance in the future, specially because of the funds that will be provided under the UNCSTD programme (paragraph 6).

2. INITIATING, SPONSORING AND SUPPORTING RESEARCH

14. Research Grants Scheme - The main support that the NSC provides for research scientists and technologists in the

different institutions in Sri Lanka is the provision of research grants. The grants provide for the procurement of equipment, the employment of research assistants, and other sundry expenses. The equipment is either purchased locally or ordered from abroad by the NSC and delivered to the grantees. At the conclusion of the research project the equipment has to be returned to the NSC.

15. Application for grants under this scheme are invited every year through the press. The applications are scrutinized, first by the Specialist Panels, and then by the Research Grants Board. The list of research projects that have been selected for the award of grants is put up to the Council for ratification. The projects cover the basic sciences as well as medicine, agriculture, animal husbandry and the social sciences.
  
16. An examination of the research grants being supported by the NSC shows that the major part, by far, goes to the universities. The plantation and agricultural crops are under-represented. The reason for this is that these areas enjoy high priority in their respective sectors, and funds are provided by Government through the plantation and agricultural research institutes. Hence, the relatively small scale funding that the NSC provides on grants, could generally make only a small impact on the research programme in these areas. On the other hand, the role of the NSC in providing grants to the universities for basic and applied research is a very vital one, for, if not for these grants, even the limited amount of research work being done in the universities will be drastically reduced. Besides promoting research per se, these projects also serve to provide training for research scientists on local problems. A number of Ph.D.s and M.Sc.s have been awarded to research students working on NSC-funded projects.

17. Small-scale grants are also made in the field of science education research. The grantees are mainly from among science teachers in schools.
  
18. Special Research Projects - In 1978/79 the Swedish Agency for Research Corporation with Developing Countries (SAREC) offered US \$ 150,000 for research projects recommended by the NSC. Three special research projects are being supported under the SAREC grant. They are: A study of liver diseases - the research project being carried out at the Peradeniya University and at the MRI, Colombo; 2. A plant virology project - at the Central Agricultural Research Institute, Gannoruwa; and 3. A project on Environmental Studies - at the Colombo University. The Council has also recruited six Scientific Officers who, while remaining members of the NSC staff, will be actually working at the three SAREC project units.
  
19. Man and Biosphere Research Projects - The Man and the Biosphere National Committee, working under the aegis of the National Science Council, has initiated, and continues to coordinate, work in a number of research projects, some of which are of a multi-disciplinary nature. The research work is being carried out by a number of different institutions, namely, five university departments, the Land Use Division of the Department of Irrigation, the Division of Occupational Health of the Ministry of Labour, and the Forest Department. The projects are: Education and Training in Environmental Studies ( this project receives aid from the SAREC grant); Studies in Natural Grasslands; Surveying levels of Pesticides in Food; Maintenance of Natural Forest Arboreta and Biological studies therein; and the Monitoring of the Total Environment (biotic, climatic, edaphic and socio-economic) in Selected Areas of the Mahaweli Scheme. The last mentioned is a multi-disciplinary project, the report of which was prepared by the NSC, and approved for funding by the Mahaweli Board.

20. As part of the Environmental Studies project the following handbooks have been published - 1. Handbook of Fungi  
2. Handbook of Mushrooms, Toadstools and Boleti.

Future Activities

21. Research Grants Scheme. - The Research Grants Scheme which provides much-needed support for research in a number of institutions, mainly the universities, will continue. Monitoring procedures will be strengthened.
22. Special Research Projects - The Swedish Agency for Research Cooperation with Developing Countries (SAREC) is expected to provide additional funds in 1979/80. A part of this will go to provide additional support to the on-going projects. In addition, it is expected to use the grant to set up a Scientific Instruments Repair and Maintenance Workshop.  
Repair and maintenance facilities are extremely limited in Sri Lanka, and as a result of this, expensive equipment remains idle for years. The proposed workshop will therefore fulfill a long-felt need.
23. Man and the Biosphere Projects - Work will continue on the projects that have been started, and with more equipment being supplied, the pace of work is expected to increase. The following handbooks are expected to be published shortly -  
1. Handbook on Liverworts, 2. Handbook of Mosses, and  
3. Handbook of Pteridophytes.
24. Other Research Projects - More funding is expected from various foreign agencies for scientific research in Sri Lanka, and the NSC will play an increasingly important role as the local agency for selecting research projects and controlling the grants.

3. COLLECTION & DISSEMINATION OF SCIENTIFIC AND TECHNICAL INFORMATION

25. A unit called the Sri Lanka Scientific and Technical Information Centre (SLSTIC) was formed at the NSC in 1977. With aid from a UNDP grant, the Centre has been expanded and is now in a position to provide a useful information service to Sri Lanka scientists. SLSTIC specialises in acquiring literature in the areas that are not adequately served by other libraries, namely, science policy, science education, and the environment. In other scientific fields SLSTIC assists scientists by providing an inter library lending service and a photocopying service. The latter is used by the scientists to obtain photocopies of scientific papers not found in their own libraries. By establishing links with foreign libraries SLSTIC could also obtain copies of scientific and technical reports and retrieve information from other countries and from international data banks.

26. In order to coordinate and rationalise the acquisition and use of resources in the science libraries of Sri Lanka, the NSC publishes the following documents regularly:

- (a) Current Science Bulletin indicating the new acquisitions of books in the different scientific libraries in the country.
- (b) A Union List of Periodicals which lists the periodicals acquired by the different libraries.
- (c) Sri Lanka Science Index which is an inventory of scientific papers, articles, reports etc. published in Sri Lanka.

SLSTIC also provide training courses for library staff from other scientific libraries.

27. The NSC publishes the following journals biannually:

- (a) The Journal of the National Science Council of Sri Lanka. This is a journal for the publication

of scientific papers. This journal is up to the highest international standards.

- (b) The Sri Lanka Journal of Social Sciences. This journal which was started only in 1978, has already gained prominence as an important publication in the field of social sciences.

28. Besides these two journals, the NSC publishes a bulletin - the Vidurawa, in all 3 language media. This is a science magazine for the public and for students. It is published quarterly, and each issue is devoted to a particular theme. Some of the earlier issues were on: The Environment, Science Policy, The Mahaweli Development Scheme, Quality Control, etc.
29. The report on the proceedings of a seminar on the Role of Tourism in Social and Economic Development in Sri Lanka (organized by the Social Science Research Centre of the NSC) was published in 1979.

#### Future Activities

30. The activities of SLSTIC will be expanded further to strengthen the existing services and to provide additional services to scientists.

The NSC has undertaken to publish a major work: The Medicinal Plants Used In Sri Lanka (5 Volumes) by Mr. D.M.A. Jayaweera. The volumes are in the press. A new journal: Science Investigations in Sri Lanka will be published commencing 1979. This will contain the results of science investigations carried out by students and teachers.

31. Scientific Reading Material - The Science Education Research Committee of the NSC had started a project to invite local experts to write information booklets on selected scientific topics of popular interest. The response has been good, and 50 manuscripts have been received. It is expected to publish

some of these shortly.

4. MAINTENANCE OF LIAISON WITH SCIENTISTS AND TECHNOLOGISTS & SCIENTIFIC AND TECHNOLOGICAL INSTITUTIONS IN SRI LANKA AND ABROAD

32. While it is necessary for the Council, in respect of nearly all its activities, to maintain close liaison with scientists and scientific institutions, both local and foreign, this section of the report enumerates a few main areas of collaborative activity.

33. Seminars/Workshops - In the past two years the following major seminars/workshops were organized by the NSC either on its own or in coordination with other institutions in the country:

- (a) Third Asian Symposium on Medicinal Plants & Spices (February, 1977). This symposium was jointly sponsored by the NSC, UNESCO and the Sri Lanka Foundation Institute. The seminar was preceded by a Workshop held in the university laboratories at Peradeniya. An exhibition of medicinal plants and spices was also held at the Ayurvedic Research Institute, Nawinna, in connection with the symposium. Foreign participants, including representatives from UNESCO, Holland, Belgium, New Zealand, Italy, Sweden, Australia, Japan, and Great Britain attended the symposium.
- (b) Seminar of Heads of Geological Surveys in the Asia-Pacific Region (November/December, 1977). The NSC in association with the Department of Geological Survey organized this seminar on behalf of the Government of Sri Lanka. A number of heads of Geological Surveys of countries in the region attended the seminar.
- (c) National Workshop on Science and Technology for Development (June, 1978). This was a workshop for examining the draft Sri Lanka National Paper for UNCSTD. It

was attended by a large number of local scientists, planning officers, private industrialists, etc.

(d) Symposium on the Analysis and Consolidation of Information (September, 1978)

This international seminar which was sponsored by UNESCO was organized by the NSC on behalf of the Government of Sri Lanka. The participants included a number of distinguished scientists and information specialists from abroad.

34. Survey of Natural Resources - Dr. Cyril Ponnampereuma who visited Sri Lanka in 1978 had indicated that it would be possible to obtain assistance from the United States for certain types of resource survey in Sri Lanka. On request by His Excellency the President, the NSC with the assistance of local experts prepared a project report titled: Possible Areas of Collaboration between Sri Lanka and the University of Maryland and other Institutions in the US for the Survey of Natural Resources and Land Use Patterns in Sri Lanka - A Preliminary Report.

35. International Collaboration - The NSC is the national member of a number of international scientific organizations like the Commonwealth Science Council (CSC), the Committee on Science and Technology in Developing Countries (COSTED), the Association of the Science Co-operation in Asia (ASCA), etc. Collaboration with these organizations involves the coordination of activities in Sri Lanka, the participation in regional activities, the screening of applications for research funds and travel grants, etc. The NSC is also the Sri Lanka focal point for the coordination of scientific collaborative work between scientists and institutions in India and their local counterparts under the Indo-Sri Lanka Agreement.

Future Activities

36. Liaison with scientists and scientific institutions both

in Sri Lanka and abroad will continue to be strengthened as the activities of the NSC expand.

37. Seminars/Workshops - The NSC has started preparatory work for holding a workshop on Post Harvest Food Losses in early 1980. A number of ministries and government departments will participate in this workshop which is expected to bring out the major causes of post harvest food losses in Sri Lanka and to draw up an action programme for controlling and reducing food losses. Scientists from the US Academy of Sciences will also be participating in this workshop.
38. As a follow-up of the project report prepared by the NSC and referred to in paragraph 34, it is expected to hold a workshop in 1980 on the Survey of Natural Resources in Sri Lanka. The US Academy of Sciences is expected to participate in this workshop too. The objective of the workshop would be to draw up a programme for collaboration between Sri Lanka and institutions in the United States for selected areas of natural resources survey in Sri Lanka.
39. A workshop on Teaching Aids for Bio-science Education will be held in November, 1979. The NSC, the Colombo University and the Committee on Science and Technology in Developing Countries (COSTED) will jointly sponsor this workshop.

5. SCIENTIFIC MANPOWER - EFFECTIVE UTILIZATION, FUTURE NEEDS, TRAINING

40. Inventory of Scientific Manpower - The NSC carried out a comprehensive survey of the scientific and technical manpower in the country. The survey is now completed, and a wealth of information has been gathered. The report is being compiled and will be published shortly. The Social Science Research Centre of the NSC is carrying out work connected with the compilation of a national register of social scientists. These reports when published would assist Government in the effective utilization of the available scientific and technical manpower and in planning for the future needs of the country.

41. Manpower Training - The NSC started a manpower training programme designed to increase the output of locally trained research scientists for the needs of scientific institutions in the island. The scheme did not produce the desired result because of the lack of adequate senior scientists who could spare the time to supervise research on the scale envisaged. However, interest in the scheme was revived recently, and a number of scholarships have been given for post-graduate studies/research in the Post-graduate Institute of Agriculture and the Rubber Research Institute.
42. Future Activities - The results of the surveys of scientific and technical manpower and of social scientists will be published as soon as the reports are completed. The scientific manpower training programme will be expanded to increase the output of scientists trained in research in local institutions.

6. SUBJECTS OF NATIONAL IMPORTANCE ON SCIENTIFIC, TECHNOLOGICAL EDUCATIONAL, SOCIOLOGICAL AND ECONOMIC MATTERS

43. The NSC, from time to time, examines questions of national importance, in relation to scientific affairs and, where necessary, takes appropriate follow-up action which leads to recommendations being made to Government. Very often, too, matters of national importance concerning science and technology and related matters are referred to the Council for recommendation and advice. Many of the activities outlined in this foregoing part of this report were started on the initiative of the NSC, recognizing certain national needs. In 1976, the NSC carried out a study of Environmental Management and published a comprehensive report on the subject. In 1977, the NSC served as the local counterpart institution in connection with a survey of environmental management carried out by a team of UNEP experts.

44. The NSC in association with the Man and the Biosphere National Committee pointed out the problems that would arise in regard to the fuel requirements of the new Mahaweli settlers. A project report was prepared by the NSC, and following on this, the Forest Department has commenced work on reforestation. Further follow-up action is being taken by the NSC regarding the better utilization of fuelwood etc.(paragraph 9).
45. Two other problems of national importance: the utilization of alternative energy resources (paragraph 8) and the upgrading of science education in rural schools (Paragraph 11) are now being examined by special committees convened by the NSC.
46. Future Activities - The NSC will continue to be alert to problems of major importance in relation to science and technology and national development. Wherever necessary studies will be carried out and the recommendations submitted to Government.

7. DEVELOPMENT OF SCIENCE AND TECHNOLOGY IN SRI LANKA

47. The activities of the NSC are ultimately aimed at the utilization of science and technology for the development of the country. Its functions are broadly to indicate how science and technology should be developed and harnessed to achieve the development goals set by the Government and to play a supporting role in the development of science and technology. The NSC will continue to function in this role in the future.