

INTRODUCTION

Sri Lanka Science and Technology Statistical Handbook 2013 comprises the findings of the National Research and Development Survey 2013 conducted by the National Science Foundation (NSF), Sri Lanka. This Handbook mainly focuses on the policy authorities, scientists, researchers, donors, and other stakeholders who are interested in having a broad picture of the status of S&T sector in the country during the year 2013. The statistical indicators given in the book have been worked out using the international Standardization of Statistics on science and technology (UNESCO, 2010) and the Frascati Manual 2002 (OECD, 2015) for international comparability while the data contain most up to date evidence based information as well as the related information pertaining to the past years.

The data presented in the Handbook also gives a qualitative analysis of the whole S&T sector of the country namely, the higher education Institutions; R&D Institutions; S&T institutions (S&T management, administration and services); Industries; and the national and international non-governmental institutions. In most cases, the data given in this Handbook is relevant to the surveyed year of 2013 depicting different perspectives. Readers will be able to obtain a comprehensive overview of S&T statistics under many different indicators and to interpret further, based on these data.

Sri Lanka Science and Technology Statistical Handbook 2013 has been prepared by the Science and Technology Policy Research Division (STPRD) of the National Science Foundation, Sri Lanka.

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TECHNICAL NOTES

Research, development and innovation consists of people, institutions, processes, infrastructure, linkages and collaborations that occur in the generation, diffusion and absorption of scientific and technological knowledge. The capability, performance and efficiency of Sri Lanka's Science, Technology and Innovation system is crucial for advancement of future economic prosperity, social development, standard of living and quality of life.

This survey covered the following 04 major S&T sectors:

- a. Higher Education sector (State and Private)- full coverage
- b. State S&T sector that included Research Institutions, and S&T service providing Institutions – Full coverage
- c. Business Enterprises – 250 institutions were selected for the survey considering the size of the establishment, volume and intensity of their R&D activity, and proportion of their contribution to the national economy. All the major industries that conduct substantial amount of R&D were included into the sample.
- d. Private Non Profit Institutions – all institutions that were involved in the activities related to S&T were covered in the survey

The data, wherever possible are presented in conformity with the standard and methodologies stipulated by UNESCO and OECD. International standard classifications relevant to Science, Technology and Innovation were followed in the formulation of the questionnaire, development of indicators, and in the presentation of data and other information.

HIGHLIGHTS-2013

- Sri Lanka had spent a total of Rs. million 9,670.00 (USD million 73.3) on R&D in 2013. This corresponds to 0.11% of the GDP of the country, which was lower than the expenditure incurred in 2010 (0.16 % GDP).
- The annual investment on R&D by the government of Sri Lanka was to Rs. million 5,209.97, which is 53.88% of the total R&D expenditure of 2013 and 0.06 of the GDP.
- The business enterprise sector contribution for R&D expenditure had increased to Rs. million 3,934.04, which was 40.68% of the total R&D expenditure of 2013 and 0.05 of the GDP.
- Foreign investment sector contribution to R&D expenditure was Rs. million 486.17, which was 5.03 % of the total R&D expenditure of 2013 and 0.006 of the GDP, while contribution by other sources was Rs. million 39.83, which was 0.41% of the total R&D expenditure of 2013 and 0.0005 of the GDP.
- 34.81% (Rs. million 3,365.95) of the R&D expenditure had been invested in the state sector organizations (R&D institutes and S&T service sector institutions), and 19.97% (Rs. million 1,931.12) had been in the higher education institutes and 44.88 % (Rs. million 4,339.60) in the business enterprise sector.
- 57% of the R&D expenditure was invested in applied research followed by 33% on experimental development research and 10% on basic research.
- In 2013, 33% of the total R&D expenditure was spent on engineering sciences & technologies, followed by 27.9 % in agricultural sciences, 24.6% in natural sciences, 9.4 % in medical sciences, and 4.9 % in social science and humanities. 0.2% of it was spent on multidisciplinary research activities that were difficult to categorize.

- In 2013, Sri Lanka had a total Science and Technology work force (STP) of 113,447 that were engaged in S&T related activities in the S&T related organizations and business enterprises. 11.12% of this number comprised scientists, engineers and professionals engaged in R&D, testing, constructions and other service based activities including administration and management. 14.25 % of STP comprised technicians, while 74.63 % were supporting staff.
- In 2013, the number of scientists engaged in the R&D work (full time or part time) was 5,705 and the number of technicians was 3,200.
- 46.77% of R&D scientists were employed in the higher education sector, while 31.88% were in the government organizations, 21.1% in the Business Enterprises and 0.25% in Private Non Profit (PNP) organizations respectively.
- The highest number of R&D scientists were engaged in research in natural sciences (25%). This was followed by engineering and technology (20%), agriculture sciences (19%), medical sciences (17%), social science and humanities (12%) and 7% in other fields.
- In 2013, 39% of the total R&D scientists were females.
- The total number of Full-Time Equivalent (FTE) researchers was 2,276, of which 37% were female scientists.
- Out of the total number of Full-Time Equivalent (FTE) researchers, 45% were in the government sector organizations, 23 % in higher education, 31% in business enterprises and 1% in Private Non Profit (PNP) organizations.
- In 2013, the number of patents registered by the Patent Office of Sri Lanka was 491, of which 326 were by Sri Lankan residents and 165 by the non-residents.
- In 2013, 391 articles were published by the Sri Lankan scientists in the SCI journals, of which 77% were with foreign co-authors.
- In 2013, 1,857 scientific personnel completed postgraduate degrees, which included 27-Ph.D; 251 -MS/MD; 82-M. Phil; 1018 M.Sc./M. Eng.; and 5,479 -Postgraduate Diploma.

- In 2013, the government R&D institutions developed 28 new products, transferred 06 of their technologies and commercialized 05.
- In 2013, the government R&D institutions developed 18 new processes, transferred 03 and commercialized 05.
- In 2013, the government R&D institutions improved 14 existing products and 06 existing processes. They transferred 04 products and 01 process technologies and commercialized 05.
- In 2013, the government R&D institutions produced 16 new plant varieties and hybrids, transferred 09 and commercialized 07.
- In 2013, the government R&D institutions designed 06 prototypes, but none were commercialized.
- In 2013, the higher education sector institutions, developed 25 new products, transferred 02 of their technologies and commercialized 14.
- In 2013, higher education sector institutions developed 06 new processes, transferred none and commercialized 05.
- In 2013, the government R&D institutions improved 09 existing products and 05 existing processes. They transferred 01 process technology and commercialized 04.
- In 2013, higher education sector institutions designed 10 prototypes but none were commercialized.

Abbreviations

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|--------|--|
| FTE | Full Time Equivalent |
| GDP | Gross Domestic Product |
| GERD | Gross Expenditure on R&D |
| IPR | Intellectual Property Rights |
| IT | Information Technology |
| MIS | Management Information System |
| na | not available |
| NA | Not Applicable |
| NARESA | Natural Resources, Energy & Science Authority |
| nes | not elsewhere specified |
| NSF | National Science Foundation |
| o/w | of which |
| OECD | Organization for Economic Co-operation and Development |
| PCT | Patent Cooperation Treaty |
| PNP | Private Non Profit |
| PPP | Purchasing Power Parity |
| R&D | Research and Development |
| S&T | Science and Technology |
| SCI | Science Citation Index |
| STI | Science, Technology and Innovation |
| STP | Science and Technology Personnel |
| STPRD | Science & Technology Policy Research Division |
| UGC | University Grants Commission |
| UIS | UNESCO Institute of Statistics |

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Definitions

Abbreviations

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