

EXECUTIVE SUMMARY

The significant role of Science and Technology (S&T) in socio-economic development is universally recognised. One of the important indicators of S&T development is the amount of expenditure on Research and Development (R&D). There has not been much improvement in the national expenditure on R&D since 1994. The national expenditure on R&D in 1996 was RM549.1 million, which is equivalent to 0.22% of the GDP. This registered a systematically decreasing trend over a period of 1992 - 1996 with the ratio of 0.34% and 0.37% in 1994 and 1992, respectively. These figures are far below the international standard, which is rapidly approaching 3.0%.

The public sector, i.e., the Government Agencies and Research Institutions (GRIs) and also the Institutes of Higher Learning (IHL), experienced substantial reductions in the total R&D expenditures. The R&D spending by the GRIs and IHL were down by 34% and 73%, respectively. The public sector faced a similar decline in the number of research personnel as well as the Full Time Equivalence (FTE). However, the private sector continued to support R&D activities by contributing a total amount of RM 400.1 million for R&D in 1996. This constitutes about 73% of the total national R&D expenditure.

The availability of qualified researchers is crucial for R&D activities. The number of researchers decreased from 5.8 researchers per 10,000 labour force in 1994 to 5.1 per 10,000 labour force in 1996. This number is relatively low compared to the numbers in some selected countries like [Singapore (48), Japan (82) and USA (74)].

The focus of R&D activities varies across the sectors. While the public sector overwhelmingly concentrated in Agricultural, Biological, Medical and Health Sciences, a large amount of fund was allocated to R&D activities in Engineering by the Private Sector.

The area of Information Technology industries accounted for only 11.6% (RM 63.8 million) of the total national R&D expenditures despite the Government's pronouncements of its importance.

There has been quite encouraging development in cooperation between the private sector and other organisations in carrying out R&D activities. This is indicated by the increasing amount of funds contracted out by the sector, from RM 29.4 million in 1994 to RM 58.1 million in 1996. However, the majority (nearly 91%) of the outsourcing fund went to foreign companies that were involved in construction, electronic and telecommunication industries.

There are many factors limiting R&D activities experienced by most sectors. The most prominent ones are delays in making decision pertaining to application for research budgets, lack of personnel with requisite expertise, and lack of R&D

management know-how. It is interesting to note that the incentives introduced by the government for private companies carrying out R&D has not been able to attract more to join in this activity. This is indicated by a decrease (from 46.3% to 36.7%) in the number of companies applying for such incentives. Many cited unclear procedures and vague definition of R&D as the main reasons for the lack of interest in the incentives.