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CSIR AND NATIONAL DEVELOPMENT

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The Council of Scientific and Industrial Research

(CSIR) was founded in 1942 as an autonomous society for

harnessing science for the promotion of national welfare. The vast system of national laboratories spread over the length and breath of the country was possible because of encouragement received from India's first Prime Minister Jawaharlal Nehru by the founder of the institute, S.S. Bhatnagar.

The rapport between the statesman and scientist resulted in what C.V. Raman described as 'Nehru- Bhatnagar Effect', the blossoming of an open system of cultivation of science and technology which now consists of a network of 39 research laboratories and 2 research associations.

The charter of objectives of CSIR enunciated at its birth and unchanged till now is all-emcompassing. This includes the promotion, guidance and coordination of scientific and industrial research, the collection and dissemination of information on research and industry, the founding of laboratories and growth centers in key areas to further science and technology,

Its objective is in the end an effort to exploit the research results for the development of industry and lend its mite to fulfilment of various national development goals, such as, technology mission for drinking water.

The impact of CSIR on the national scene, both on the areas of science and technology and in the impact on national economy have been intangible and tangible. On the intangible front, it has spawned many organisations and many disciplines, and most importantly, through its grants for research the CSIR has served as a nursery and training ground for many talented scientists and technologists. The intangible contributions helped to create an environment in which others have delivered tangible returns.

Some of the significant tangible returns from CSIR have been the following:

1. Industrial production based on technology licensed by CSIR is presently around Rs.500 crores. The annual addition to this ranges between Rs.50 to Rs.100 crores.
2. Over 50,000 wholly indigenous tractors valued at over Rs.200 crores have been manufactured based on CSIR technology.
3. The productivity in a number of sugar mills has been significantly enhanced by the use of instrumentation system developed in CSIR.
4. High level capabilities in CSIR for testing and design of aircraft have enabled safety evaluations and enhancement in the operational life of aircraft.
5. A whole range of modern pesticides with low residual effects developed by some of the CSIR laboratories are being successfully manufactured by a number of private sector units.

6. Titanium Substrate Insoluble Anodes are increasingly being used in the chlor-alkali industry. These help to save over 15% in electric power consumption.

7. A whole range of modern pesticides with low residual effects developed in the chemical group of laboratories of CSIR are being successfully manufactured by a number of entrepreneurs.

Success have been achieved when there has been a close coupling between the CSIR, engineering design organisations and the manufacturing enterprises.

Success depended on the ability of the receiver of technology to carry out improvements on his own. When the development team from the laboratory has moved out to manage the commercialisation of the knowhow developed by them, success has ensured.

The other factors behind success were the pressure of demand and when the R&D tasks have been specific and well defined.

Before we discuss some of the major achievements, the description of which are not exhaustive one, of CSIR in various fields it would be of interest to have a glance at some statistical data.

In ten years (1977-78 to 1986-87) the CSIR received about Rs.6.45 crores from premiums and royalties on the utilisation of its products and processes. (Table 1). Table 2 is an account of research utilisation during the year 1985-86. Of interest is to note that the annual production from ongoing licensees was Rs.500 Crore. One may also see that the annual savings accrued by use of CSIR techniques was about Rs.200 crores.

Table 3 shows the statistical data regarding the number of processes and products licensed during the period (1975-83). The data are given groupwise of laboratories: Chemical, Physical, Engineering and Biological Groups. One notes that about 24% of the parties licensed and 31% of processes licensed during the period for CSIR as a whole are in production.

In what follows we describe some achievements of CSIR in the last few years under various leads. We highlight impact made by some of the leading laboratories. The discussion covers some key areas where the CSIR has made an impact to be followed by how the CSIR has responded to the goals of technology mission.