



DEVELOPMENT OF SCIENCE AND TECHNOLOGY IN INDIA DURING 1947-1964

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ABSTRACT

During 1947-1964 rapid development of science and technology took place in India. That was mainly because of the support given to that activity by India's Prime Minister, Jawaharlal Nehru, who had education in the scientific subjects and who had understood the role which science plays in making the life of man modern, happy and progressive in the world. The present paper attempts to take a review of the development of science and technology in India during 1947-1964.

Keywords: Nehru Era, Science and Technology

Introduction:

During the period from 15th August, 1947 to May, 1964, Pandit Jawaharlal Nehru acted as the Prime Minister of India. As the Prime Minister of India he successfully played an important and active role in the national, political life of India. That period of his Prime Ministership has come to be known as the "Nehru Era" in the analysis of Indian history.

The Nehru Era is of great importance in the history of India as during its period India not only made rapid development in the political, economic, social, cultural and foreign policy matters, but also became one of the leading countries in the world in the matters which are shaping the destiny of mankind.

Nehru was a visionary person. He was well aware of the future challenges in advance. Consequently, he believed that it is the scientific and technological development through which he could bring the expecting change in India.

I) Science in India, 1947-1964**• Scientific Policy Resolution:**

The Government of independent India under Nehru took aggressive steps to increase employment in India during 1947-1964 and to eradicate the poverty from the life of the people of India. It had realized that the increase in the employment and the elimination of poverty can be achieved by the application of improved methods and techniques which need to evolve with the help of science and technology. As a result, it decided by its Scientific Policy Resolution of 1958 to "foster, promote and sustain, by all appropriate means, the cultivation of science and scientific research in all its aspects-pure, applied and educational."

Prime Minister who wished to effect rapid development of science and technology in India took prompt steps to implement that resolution.

A) Reinvigoration of the Council of Scientific and Industrial Research:

The Council of Scientific and Industrial Research was established in 1942. However, it

had not done much work then. But after independence when Nehru became its President, he gave a scope to expand scientific research by setting up National Laboratories and Institutes in India.

i) National Laboratories and Industries:

The council of National Laboratories and Industries Research had set up 28 national laboratories and institutes at various centres in India by 1964. They covered the most vital fields of science and technology. The scientific research work carried out in the National Laboratories and Institutes thus proved fruitful to the Indian industries.

ii) Sponsored Research:

The Council of Scientific and Industrial Research promoted industrial laboratories and universities to pursue fundamental and applied research and develop their own special fields. For this they provided a liberal system of grant-in-aid scientists in other technical institutes. In 1964, there were more than 495 such schemes which were in progress. Those schemes provided opportunities of training for young research workers and developed centres of independent research work in India.

iii) Cooperative Research Associations:

The Council of Scientific and Industrial Research assisted the Cooperative Research Associations in the different industrial fields by giving them monetary help of different kinds-technical, advice of expertise and materials. That had increased the activity of scientific research in India.

iv) Liaison:

The Liaison units were set up by the Council of Scientific and Industrial Research in some of the laboratories to maintain contact with the industry, industrial and trade associations, government departments and other users of research. That helped the growing activity of scientific research in India.

v) Vigyan Mandirs:

Forty-eight centres known as "Vigyan Mandirs" were set up by the Council of scientific and Industrial Research. Those centres disseminated scientific knowledge among the rural population. Through it they educated them the potentialities of the methods of science as applied to their day-to-day life.

Besides, the variety of researches and experiments were conducted in various branches and subjects of science in the same Nehru Era.

B) Atomic Energy Centre:

One of the significant contribution of Nehru in the development of science and technology in India was the establishment of the Atomic Energy Centre (1945) at Trombay (near Bombay). It became the national centre for research and development of atomic energy in the Nehru Era. It was one of the important spheres in which India had made progress in the Nehru Era. It was due to the encouragement which Nehru had given to that research that India became one of the leaders in this field. Consequently, the Atomic Energy Commission was established in 1948 which was responsible for planning and implementing the programme for the development of atomic energy for peaceful purposes. In addition to this, Rare Minerals Survey Unit (1949), Atomic Energy Establishment (1954), Apsara (1956), Production of Uranium Metal (1959) CIRCUS (1960) Zerlina (1961) etc. were the significant landmarks in the development of India's nuclear programme for the peace and progress of mankind.

C) Outer Space Research:

Another important achievement of India then was the constitution of An Indian National Committee on Space Research. Its aim was to aid and advice in the formulation and execution of policies on the peaceful uses of outer space.

i) Other Departmental Research Activities:

In the Nehru Era, research activities were undertaken in the subjects of their concern. For instance, the Hydraulic Research Stations, the Botanical Survey of India, the All India Radio and Railway Board, the Indian Standard Institutes, etc.

ii) Other Institutions:

A number of research organizations financed by private endowments and Governmental assistance undertook useful and productive research activities in the subjects of their undertaking and thereby helped India to effect progress in scientific matters in the Nehru Era.

II Technology in India, 1947-1964:

Technology means the practice of any or all of the

applied sciences which have practical value of industrial use. It includes the development of engineering and industry and medical science and agriculture. As the Nehru Government held the view that as far as possible the Indian industries should be manned by the Indian technologists themselves. It took steps to effect the development of technology in India.

a) Engineering and Technological Institutions:

A large number of Engineering and Technological Institutions were started by the Nehru Government in order to prepare Indian technologists. Moreover, to meet the requirements of technical personnel, during 1947-64, the Nehru Government also started Vocational and Technical Schools. In the Nehru Era, more than 44 Engineering Colleges and 171 Polytechnics existed. As a result, India started becoming self-sufficient rapidly in having its own technologists to man its industries by 1964. Nehru Government also offered facilities of technical education to the Indian women by starting more than 18 Polytechnics during 1947-64. It also established 19 centres to conduct part-time Diploma courses in Engineering for persons working in industry and other technical establishments.

b) Indian Institute of Technology:

In order to give higher technical education to the Indian students, the Nehru Government established i) the Indian Institute of Technology, Kharagpur ii) the Indian Institute of Technology, Madras iii) the Indian Institute of Technology, Bombay iv) the Indian Institute of Technology, Kanpur and the Indian Institute of Technology, Delhi. These institutes trained successfully thousands of Indian students.

c) Medical Research:

The Indian Council of Medical Research (established in 1912) was engaged in the promotion and coordination of medical research in India. In the later half of the twentieth century, some institutes, such as, the All India Institute of Medical Science in Delhi, The Indian Cancer Research Centre in Bombay and Central Institute for Research in Indigenous Systems of Medicine in Jamnagar were set up. In 1956, The Jawaharlal Institute of Postgraduate Medical Education and Research in Pondicherry and All India Institute of Medical Sciences at New Delhi, Postgraduate Institute of Medical Education and Research at Chandigarh were set up. These institutes produce specialists and undertake intensive research in medical and allied fields. Specialized institutions such as the Indian Cancer Research Centre, the Tata Memorial Hospital at Bombay, the Chittaranjan Cancer

Hospital at Calcutta, the Cancer Institute at Madras and the Radium Institute and Cancer Hospital at Hyderabad have been set up for undertaking research on the causes and cure of cancer.

d) Agricultural Research:

Agriculture is the mainstay of the Indian economy. Hence, the river valley irrigation projects were undertaken in the Nehru Era. In the Nehru Era, many agricultural universities have been set up in different states in India with the object of integration of research and extension. The Indian Council of Agricultural Research (established in 1929) aided, promoted and coordinated agricultural and animal husbandry education and research in India in the same era. In order to make its work more effective the Government of India developed it into one of the biggest institutions of its kind in Asia. These institutes carried out useful researches which improved the agriculture in India during 1947-64. Under the guidance and direction of the scientist-educator Dr. M. S. Swaminathan the India saw the Green Revolution and other evolution of several crop-hybrids with high yield potential and the progress in agriculture has been regarded as phenomenal by all standards.

III) Contribution of Leading Indian Scientists

The eminent Indian scientists' efforts can not be ignored in the development of science and technology in India during Nehru Era. The great scientists like C. V. Raman, Meghnad Saha, Homi Jahangir Bhabha, Dr. Vikram Sarabhai, Dr. Har-

Govind Khurana, Dr. Jayant Narlikar devoted and laid down their lives for the welfare of the human beings. Their scientific and technological activity and research provided a sound foundation for the development of science and technology in India. Their remarkable contribution in their fields uplifted India's position in a world.

Conclusion:

In short, Nehru's contribution to transform India into a modern country is remarkable. In real sense, his vision and Government change the face of up-coming India. As a result, India was placed firmly on the path of progress and modern life in the Nehru Era.

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