

Development of Science and Technology: Role of the Government of India



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Abstract: *Science and Technology has become a very integral part of our society and without it one can never think of living in a developed society or country. The Constitution of India also talk about the development of scientific temper. Thus, it becomes the duty of each citizen, institution and also of the government to work for the advancement of science and technology. All the countries in the world are now striving for developing the spheres of Science and Technology including India. Modern India and its governments were and are always very keen towards the development of Science and Technology in India. Pt. Jawaharlal Nehru being the very first Prime Minister of the newly Independent India has laid the foundation stone in developing science and technology by establishing various institutions in India. Since then India is unstoppable in developing various spheres of science and technology and has become a leading developing country in the world. Thus, this paper has focused on the growth and development of Science and Technology in India. Moreover, in this paper the initiatives taken by the government of India from time to time has also been analysed.*

Keywords : India, Development, Government, Policy, Science, Technology.

I. INTRODUCTION

The meaning of Policy is a plan of action that can be of a government, political parties or any such groups and institutions which is meant to influence and also to determine the decisions, actions, and other such matters.¹

In today's world, the development of economy of a country is mainly determined by the development of new knowledge and achievements in the field of technology of course along with other factors.² Over the period of time, the government of India through different measures has paved the way towards the development of the area related to Science and Technology. Due to the initiatives taken by the government of India, technological advancement as well as development of knowledge base in the fields of Science has gone through a

drastic change. In India, the Department of Science & Technology (DST) was also established in the month of May in the year 1971. The aim behind the establishment of the DST is promoting new areas of Science & Technology and also to play the role of a nodal agency for organising, coordinating and promoting Science and Technology activities throughout the country³. India now holds a key space in the field of advanced technology with the existence of many excellent institutions of Science and Technology which has come with well qualified and well- trained manpower.

II. SCIENCE AND TECHNOLOGY AND THE SOCIETY

By the beginning of the 21st century, the notion of development was linked with the development in the field of technology and this linkage continue to be more intense in the following years. In the present world, in order to achieve overall development of a society or a nation, then the use and importance of science and technology cannot be ignored. Science and Technology are a kind of miracles which are intrinsically connected to each other. The Scientists use their knowledge to develop technology and the again technology is used to develop Science.⁴ After the development of advanced science and technology, our societies these has become totally dependent on different technology right from morning till night which has both good as well bad impacts. Due to these dependencies the people in are losing vital social connections as well as living skills. It can be said that science and technology these days has started dominating people's lives. Though there are adverse impacts of science and technology which definitely should not be ignored but because of such thing we also cannot ignore the need of science and technology as it is the basis for overall development of nation like India.

III. POLICIES INTRODUCED BY THE GOVERNMENT OF INDIA ON SCIENCE AND TECHNOLOGY

In India, from the very ancient period to that of the modern, the major emphasis has been given in the planning and policy on the development of the areas of Science and Technology.⁵

³ "DST - Institute of Nano Science and Technology", www.inst.ac.in/dst, Accessed: 14/09/2019.

⁴ S. Selcen Guzey and Gillian H. Roehrig, "Teaching Science with Technology: Case Studies of Science Teachers' Development of Technology, Pedagogy, and Content Knowledge", CONTEMPORARY ISSUES IN TECHNOLOGY AND TEACHER EDUCATION.

⁵ "Science & Technology Policy in India",

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¹ <https://www.thefreedictionary.com/Government+policies>, Accessed: 12/09/2019.

² Richard Heeks and Carolyne Stanforth, "Technological change in developing countries: opening the black box of process using actor-network theory", *Development Studies Research*, Routledge Publication, Vol 2 Issue 1, 2015.

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However, after the India's independence, the five-year planning scheme started and accordingly different schemes introduced by the government of India started giving even more importance on the development of Science and Technology. Since then, India has been unstoppable when it comes to scientific and technological innovations as well as development. India adopted the various policies on science through the Scientific Policy Resolution (SPR) in the year 1958 that is after 11 years of its independence in the year 1947. SPR proposed 'to train enough science and technical manpower to fulfil the country's needs in science, education, agriculture, industry and defence'.⁶ In the history of India, it is Pt. Jawaharlal Nehru who laid the foundation stone of Science and Technology and thus is regarded as the torchbearer in the sphere of Science and Technology.⁷ Accordingly, in India, the first ever policy on Science and Technology was first introduced in the year 1958.⁸ Thus, with the efforts of the government of India several policies related to Science and Technology have been introduced. Here, we will discuss the various policies adopted by the government of India from time to time in the field of Science and Technology.

A. Scientific Policy Resolution, 1958

It was the first policy introduced by the government of India which was aimed towards the development of science and technology which has given emphasis merely on basic research in almost every area of science and also on developing the basic infrastructure that is needed for the development of scientific research.⁹

B. The Technology Policy Statement, 1983

The Government of India has promulgated the technology policy as the Technology Policy Statement-1983 and it is the second such policy in India in the field of science and technology. This policy recognized the role and importance of technology in economic growth and also has largely focused on achieving technological competence and self-reliance.¹⁰

C. The Science and Technology Policy, 2003

This policy has mainly focused on the fund and investment that is required for research and development.¹¹ The new Science and Technology policy has an exclusive paragraph which is devoted towards 'Public Awareness of Science and Technology' under strategy and implementation plan.¹² This policy is only meant to develop science and technology in

India but also but also has taken people as an important part in such developments.

D. Science Technology and Innovation Policy, 2013

India has declared the year 2010 to 2020 as the decade for Innovation. The Science Technology and Innovation Policy ensures faster, sustainable, and also inclusive development of the people. The aim and motto set by the policy of 2013 is "Science technology and innovation for the people."¹³ Likewise the Science and Technology Policy of 2003, the Science and Technology Innovation has also largely recognised the importance of engaging with people,

Thus, over a period of time, the government of India through different progressive policies, has developed Science and Technology in India. Moreover, apart from the above-mentioned policies, in February 2018, the Union Cabinet has approved implementation of 'Prime Minister Research Fellows (PMRF)' scheme to promote the mission of development through innovation for a period of seven years beginning from the year 2018-19.¹⁴

IV. RESULT AND DISCUSSION

With the help of government initiatives and advancement in the field of Science and Technology in India, different areas have undergone development such as development in the system of agriculture, development in the space science and medical science, Infrastructural development, development in the sphere of Information and communication technology and also various fields of engineering. Since independence the government of India has shown its commitment towards advancing and developing science and technology.

In India, as a result in the development of Science and Technology, different specialized scientific and technological institutions are being set up such as Council of Scientific & Industrial Research (CSIR) which is a premier national Research & Development organization in India, educational and research institutions like Indian Institute of Technology (IITs), Indian Institute of Science (IISc) are being established where thousands of students of India as well as outside India are pursuing scientific and technological studies and research.

The development of Science and Technology can be realized with the successful completion of the mission of the Indian Space Research Organization (ISRO) which has launched the Indian Regional Navigation Satellite System (IRNSS – 1G) and has developed an independent navigation system of India by launching

Moreover, recently India has become an Associate Member State of the European Organization for Nuclear Research. According to the available Government records, 649 Indian scientists have returned to India to pursue research opportunities between 2012 to 2017. In 2007-12 the number of returning scientists was 243. It can be termed as a big

¹³ Mathews P. George, "Analysing Science, Technology and Innovation Policy, 2013", 19th Jan, 2013, <https://spicyip.com/2013/01/analysing-science-technology-and.html>, Accessed: 11/09/2019.

¹⁴ INDIAN SCIENCE AND R&D INDUSTRY REPORT, July, 2019, <https://www.ibef.org/industry/science-and-technology>

https://www.tutorialspoint.com/fundamentals_of_science_and_technology. Accessed: 14/09/2019.

⁶ Bhanu Pratap Singh, "Science Communication in India: Policy Framework", *Journal of Scientific Temper*, Vol. 2(1&2), Jan.-Apr. 2014.

⁷ Ibid

⁸ Science & Technology Policy in India, https://www.tutorialspoint.com/fundamentals_of_science_and_technology/science_and_technology_policy_in_india

⁹ "Developments Science and Technology", <https://www.civildatas.com/subject/General-Studies/notes/de...> Accessed: 14/09/2019.

¹⁰ Ibid

¹¹ Ibid

¹² Op.cit, Bhanu Pratap, Singh.

achievement of the Government of India.

Realising the fact that Science and Technology is a key to development, modern India always has and had a strong focus on it. This has led to the establishment of many other such scientific research centers. Thus, in the area of scientific research, India is now recognized as one of the top five nations in the field of space exploration in the world.¹⁵

Henceforth, the scientific and technological base of India is very strong which spreads all over the country either in the form of academic institutions or research and development laboratories or experimental centers, and also different advanced technological industries. This is because of these developments in all the areas and aspects of Science and Technology, India at present is an unstoppable leading developing country in the world.

V. CONCLUSION

For technology related transactions, the rank of India is in third position among the most attractive investment destinations in the world. The Union Minister of Department of Science & Technology & Earth Science, Harsh Vardhan, has said that the government of India has given priority to the area of technology and has aimed at making the citizens of India science-centric. At different times, the Indian Government has played a key role towards the development of the information technology sector in India and should continue to work for its development. Science and Technology can be said as a boon for the overall development of a country. Each policy adopted by the government of India has largely emphasized on the importance of science and technology for the development of a nation. In India, Government have played and are still playing a vital role in fostering the scientific spirits in the country.

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¹⁵ Ibid