Science for Society: Formative Years of Some Science Organizations in Independent India – A Preliminary Probe

Sukalyan Gain
Ph.D. Research Scholar of History, University of Kalyani

Abstract: *The basic meaning of science is 'special knowledge'. The specialty of this particular knowledge is to understand everything by reasoning and through accurate observation. Movement means to organized protests to achieve a goal. After independence, several science organizations were formed in India, whose main aim was to popularize science, to develop scientific temper, and to promote science and technology to improve the living standard of all people. Along with that, some organizations feel that the state is not able to priorities the needs of the common people and they try to determine the priority of the people. They even play the role of pressure groups to the government so that it implements its science policy for the society. These science organizations had played a significant role in the expansion of science consciousness among the people.*

Key-Words: Science organizations, Science for Society, Science Movement, Popularize of Science, Science Magazines

After independence, several organizations were established in India, which had taken several steps to expand the concept of *science for society*. To discuss that history, it is necessary to clarify the concept of *science for society* at the very outset. Undoubtedly, science and technological growth can bring a major shift in human attitudes towards life and society. It is not only limited to attitude; science and technology can be used for the welfare of the common people. Thus to trace the history of the welfare of the common people, it is necessary to understand how science and society interact. This interaction deserves attention as far as the role of the welfare state is concerned. In a welfare state like India, the state has a responsibility to cater to the needs of the people. For that purpose science and technology are required to be utilized by the state. Along with the state, some science organizations also try to do some work for the betterment of life through using science and technology. These complementary efforts have been referred to as Science Movement.

In addition to developing science in the mother language and formation of rational society, many organizations were involved in the movement to save the environment. In the sixties of the twentieth century, when environmental degradation had become a serious issue, several science organizations of different states in India had tried to save the earth in their ways.

The development of vernacular science education in India can be traced back to the nineteenth century. In 1818 the first Bengali monthly magazine *Digdarshana* was published by the Serampore Missionaries. Marshman was the editor of that magazine. Science articles were published in *Digdarshana.* The first Bengali science book was written by William Carey's son Felix Carey in 1819. The main theme of that volume was anatomy. In the very next year, *Vidyaharabali* , a sixteen volume book was published by the School Book Society. Later, many science articles were published in *Bijnansebadhi* (1832), *Bijnan Sar Sangraha (1833).* Akshay Kumar Datta was the pioneer of science books in the Bengali language. As editor of *Tattwabodhini Patrika* (1843-1855), he wrote numerous tracts on Physics, Astronomy, Geography and the social sciences, which were highly admired by the Bengali intelligentsia.[1]Vidyasagar tried his best during 1849-57 to inject scientific principles into Indian

vernacular education. Vidyasagar wrote several books in Bengali with a strong message of modernity and scientific knowledge. In 1949, he wrote *Jiban Charit,* a free translation of the lives of noted European practicing scientists Copernicus, Galileo, Newton, William Herschel, Grotius (Hugo Groot), Carolus Linnaeus, B. J. Duval, William Jones and Thomas Jenkins.

Ishwar Chandra Vidyasagar (1820), Rajendralal Mitra (1822), Mahendralal Sarkar (1833), Jagadish Chandra Bose (1858), Acharya Prafulla Chandra Roy (1861), Ramendra Sundar Tribedi (1864), Meghnad Saha (1893), Satyendranath Bose (1894), and others tried to promote scientific consciousness. On the other hand, there was the development of different institutions in India. In this respect mention should be made of Calcutta Medical College (1835), Bose Institute (1917), Indian Institute of Experimental Medicine (1935), now known as Indian Institute of Chemical Biology, etc. In these institutions, various scientific researches were done regularly. But, only science researchers had a place in these institutions. How much do people know about scientific research? Ordinary people could not always be aware of discoveries or various aspects of science.

To address that issue, Acharya Prafulla Chandra Roy and Meghnad Saha took the initiative to disseminate science among the people in an organised way. On their initiative, the Indian Science News Association (ISNA) was established in 1935. The first meeting of ISNA was held on 9 July 1935 at the Mathematical Society Hall of the College of Science, Calcutta with about 250 people. The organization started to publish the journal *Science and Culture* to bring science to the people. Later, others followed the way of the initiators to take that organization forward. Notable among them were Upendranath Brahmachari, Hari Keshab Ghosh, Satyacharan Laha, Sir Ashutosh Mukherjee, and others.[2]

Another question arose. Science was being practiced; research was also being done on various aspects of science. But was it understandable to everyone at all? The English language was still understood by a small number of people. So what's the way? Satyendranath Bose spoke about the need of disseminating scientific knowledge in the mother tongue. Many people questioned whether would it be possible to practice science in the Bengali language at all? If so, how would it be? He replied, "Those who say that science could not be practiced in Bengali, either do not know Bengali or do not understand science." He had been trying for a long time to build an institution, which would disseminate science in the mother tongue of the commoners. In 1947, on the initiative of Satyendranath Bose and Subodhnath Bagchi, a meeting was organized with twenty-four persons at the Science College of Calcutta University. It was decided at the meeting that an institution would be set up for the propagation of science in Bengali.[3]On 25 January 1948, the initiative of Satyendranath Bose Bangiya Bigyan Parishad was established with the aim of popularisation of science in the mother tongue. It was the first organization in independent India to take the initiative to promote science in the mother tongue.[4]

Before the establishment of Bangiya Bigyan Parishad, an executive committee was formed with some leading science enthusiasts. After the establishment of Bangiya Bigyan Parishad Satyendranath Bose became the president of this institute, Subodhnath Bagchi was the working secretary and Sukumar Bandyopadhyay was the assistant secretary. Jagannath Gupta was appointed as the treasurer. Several scientists and science writers were appointed as members of the executive committee. The aims and objectives of the Parishad were declared on the day of its establishment.[5] It was said that the Parishad would try to spread the scientific outlook among the people. For that purpose, it would publish science textbooks at the school and college levels. It would also try to enrich all kinds of scientific knowledge in children's literature. It was clearly stated that the school and college-level textbooks on science subjects published by the Parishad would be enjoyable and interesting. It would also organize annual scientific conferences for the

promotion and dissemination of scientific education in the Bengali language and science exhibitions and lectures at various places.[6]

It was decided at a meeting before the establishment of Bangiya Bigyan Parishad that a monthly magazine called *Gyan o Bigyan* would be published by the new organisation. The science magazine *Gyan o Bigyan* was inaugurated on the foundation day of the Parishad,i.e. 25th January 1948. Prafulla Chandra Mitra became the editor of the magazine. In 1949, Prafulla Chandra Mitra and Gopal Chandra Bhattacharya became the joint editor of *Gyan o Bigyan* Magazine. Later, Gopal Chandra Bhattacharya became the sole editor of the magazine in 1950. Since then Gopal Chandra Bhattacharya has regularly tried to make the magazine informative as well as attractive. He kept a section for children in the magazine, where he wrote funny things about science. After 1950, the section becomes known as 'Kishore Bigyanir Daptar'.[7]

The works of Bangiya Bigyan Parishad were not only confined to publishing *Gyan o Bigyan* magazine and science textbooks, it also took initiative to publish popular science booklets and books in a simple and lucid language. In 1960, Buddhadeb Bhattacharya wrote *Bangasahitye Bigyan*.[8] It portrayed the growth of Bengali science writings in a vast timeframe starting from the writings of the European writers in the early nineteenth century to the development of science writings by the Indians till the twentieth century. Various aspects of science were discussed in this book. Bangiya Bigyan Parishad also took initiative to publish books for the school level. Noted scientist Asima Chatterjee was given the responsibility of writing textbooks at the school level. In the sixties of the twentieth century, she wrote books on chemistry for the class nine and ten. Apart from these two textbooks, several popular science books on varied subjects had been published by Parishad. Those publications include the biographies of scientists & their discoveries, aquatic animals, and books propagating against superstitions and miracles.

Besides the dissemination of science in the mother tongue, the impact of the science movement in West Bengal was particularly noticeable during the seventies of the twentieth century. Many science clubs in West Bengal started to play a leading role in that movement. The movement for the donation of posthumous bodies was developed in the eighties of the twentieth century. 'Ganadarpan' (1977) played a pivotal role in that movement. *Paschimbanga Bijnankarmi Sanstha* was established in 1977. The main role of that organization was to make social scientific. On the other hand, that organization highlighted various issues related to the environmental movement, public health, etc. In 1980 *Utsa Manush* magazine was published. It aimed to question the blind faith of human society. Ashok Bandyopadhyay was the editor of that magazine. At first, that magazine was published in the name of *Manush.* Later, the name was changed to *Utsa Manush* for the sake of registration. Varied issues related to blind faith in superstition were addressed in those magazines. Science organizations were also formed in different districts of West Bengal simultaneously with the message of utilizing science for the betterment of society. The workers of those science organizations were trying to build a society, which would be free from superstition. Those aimed to develop rational consciousness in the society.

Political parties also engaged themselves to expand the rationalist consciousness. Paschimbanga Bijnan Mancha (1986), Bijnan o Juktibadi Mancha (1994) and Break Through Science Society (1994) were established one after another. All of those organizations were connected with the leftist political parties, respectively linked with C.P.I(M), C.P.I and S.U.C.I.Like West Bengal, several science organizations were formed in other states of India, such as Assam, Kerala, Pondicherry, Tamil Nadu, Maharashtra, Delhi, etc.[9]

Let us start with Assam. A few years after the independence, a science organization was formed in Guwahati, Assam. The name of the organization was Guwahati Science Society,

which was established in 1953. In 1958, five years after its establishment, the Guwahati Science Society has renamed the Assam Science Society. The organization was formed to spread science consciousness, protecting the environment, and building a rational society in several districts of Assam. The aims and objectives of the organization were stated in its constitution. It aimed to promote and advance the cause of science, both in pure and applied branches, to promote education and research in different branches of science and technology, to disseminate scientific knowledge by holding symposia, seminars and discussions on original work and scientific matters of public interests, to popularize science through various methods, to take all such other steps and measures as may be necessary for the fulfillment of the specified aims and objectives of the society.[10]

Assam Science Society took the initiatives to publish several books, pamphlets, and leaflets. It also started to publish magazines to popularize science. At the same time, another initiative was taken by the Society to publish a bi-monthly journal for publishing scientific research papers in English. The name of that journal was the *Journal of Assam Science Society* (1955). In 2011, the name of the journal was changed to *Bulletin of Scientific Research*. Since 1981, an initiative has been taken to publish a bilingual science magazine *Bigyan Jeuti* (Flames of Science) in Assamese which is still published regularly. That organization had taken multiple steps in making people aware of the environment, health, agriculture, etc. They took the initiative to set up a state-level library, where various science books would be kept. Anyone could come and study in this library at no cost. They did not stop even during the pandemic in 2020; they organized a science session to increase enthusiasm among the students, which include science essay competitions, science cartoon drawing competitions, etc.[11]

Let's come from northeast India to South India. Kerala Shastra Sahitya Parishad (KSSP) was established on 10 September 1962. Several scientists played a significant role in the establishment of that organization, such as KG Adiyogi, K Bhaskaran, K R Narendranath, and others. They aimed to spread science consciousness among the people. At the primary level, they started their work with three main objectives; 'Popular Science Movement, Environment Movement, and Development NGO'. The organization translated several books from English to Malayalam. The sole purpose of that translation was to make it easier for people to understand various aspects of science. Since 1986, they had taken initiatives to publish science periodicals, such as *Shastra Keralam, Eureka, Shatragathy,* etc. The activities of KSSP were not limited to publishing books and periodicals, they also played a significant role in spreading scientific awareness among the students. In 1989, the organization launched an 'Aptitude Course' for students and teachers. The course was about various science events and quizzes. KSSP conducted the 'Eureka talent test' in 1973 with students from various schools. It also organized science exhibitions.[12]

The KSSP started its journey with scientists and science writers. In the seventies, engineers, journalists, and educated middle-class people also joined KSSP. At that time they were thinking about the environmental crisis. Rachel Carson talked about this environmental crisis in her book *Silent Spring* (1962). Members of the Kerala Sasthra Sahithya Parishad joined the Silent Valley movement.[13]The hydropower project was initiated in Kerala in the seventies. The Silent Valley Forest in Kerala was selected to implement the Pooyamkutty Hydro Electric Project. When the members of Kerala Sasthra Sahithya Parishad came to know about that, they started protesting against that decision. The government was compelled to cancel the decision mainly because of that movement. On the other hand, it also started a movement against deforestation. The movement was started after hearing the news of deforestation in Jeerakappar, Kerala. Members of Kerala Sasthra Sahithya Parishad oppose the Rudravaram project. The project was aimed to build a highway for pilgrims, and that would be over the Sabarimala Forest. The activists feared

that as a result of a project the forest would be extinct. In 1986, they called for a 'Forest Protection Convention' and went on to stage a strike. That project was also deserted because of the movement of KSSP. They are still working regularly to spread scientific awareness among the people and working to protect the environment.[14]

Let's come from southern India to western India. In Maharashtra Andhashraddha Nirmoolan Samiti was established under the initiative of Dr. Narendra Dabholkar. He was working as a practicing doctor since the eighties After 1982 he became a full-time activist of the rationalist movement.[15] On his initiation, Maharashtra Andhashraddhab NirmoolanSamiti (ANS) was established in 1989. In different parts of Maharastra that organization raised voice against superstition. They propagated that eradication of blind faith could be achieved by fulfilling four main objectives; those were "1. To oppose and agitate against harmful superstitions and rituals which misguide and exploit. 2. To inculcate and propagate scientific outlook, skepticism, humanism and critical thinking. 3. To encourage constructive and critical analysis of religion, traditions and customs. 4.To associate and work with progressive social reform organizations." They opposed astrology, the religious ritual of animal sacrifice, ghosts, miracles, Vastu shastra, witchcraft, etc.

In Moregaon, a small city of Maharastra, a person claimed himself Gadge Maharaj claimed that he has the divine power to cure diseases and can easily cure any person. The people of the village believed his claim and went for miracle healing. ANS members complained against that fraudulent work to the authorities. But the authorities did not take any action. The district collector ultimately had to intervene after the ANS members staged a strong protest. Before the police reached the village, Gadge Maharaj escaped, only three of his accomplices were arrested by the police.[16]

ANS played a significant role in spreading science consciousness among the students. ANS [17]members organized a course for the school students. The course was divided into three levels- 1.Vaidnanik Janiva Parichay (Introduction to awareness of science) for students studying in fourth to seventh class. 2. Vaidnanik JanivaShodh (Search of awareness in Science) is for students studying in eighth to tenth class. 3 Satya Shodh Prabodh (awareness and search of truth) is for college-going students.[18] Its magazine *Thought and Action* had a huge role to play in eradicating superstitions and expanding science consciousness. Maharashtra Andhashraddha Nirmoolan Samiti regularly published a science periodical in Maratha language *Andhrashraddha Nirmoolan Bartapatra* to spread science consciousness in the mother tongue of the region.

All India Peoples Science Network (AIPSN) is a National Network of Peoples Science Movements of India. It was established in the first All India Peoples Science Congress, organized in 1988 at Kannur in Kerala State. The attempt to establish a national platform for science organizations in India was started in the late 1960s. By that time, there were science organizations in West Bengal, Assam, Orissa, Kerala and Maharashtra. In many other states, there were committed scientists who were interested to work with the people for a social cause. The Bhopal Gas Tragedy of 1984 created a background for these groups to work together against abuse of science and technology and a lot of activities were made with united efforts. In 1987, five national *kala jathas* were organized in the name of *Bharat Jan Vijnana Jatha* (BJVJ) which culminated in Bhopal. Following that, organizations started to work in various states of India, created a conducive atmosphere for the establishment of AIPSN.

The main point of the scientific temperament is to verify everything through examinations. Science organizations have a significant contribution in this regard. The publications made by organizations were of great help for the promotion of scientific outlook. Several science organizations in India had taken several steps against superstitions. Organizational journals and,

books were one of the weapons in the fight against superstition. The organizations focused on the 'science for society' ideals to make people aware of not only the scientific knowledge but the scientific temper, which is more significant in contemporary India.

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