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SPECIAL FEATURE: YEAR OF SCIENTIFIC AWARENESS

# The messengers of science

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**The People's Science Movement has emerged as a vibrant nationwide movement encouraging mass participation in matters of development, including intervention in science-related policy formation.**

THE origin of the People's Science Movement (PSM) in India may be traced to the early 1950s when a number of organisations emerged with the aim of creating scientific awareness among the general public. The Kerala Shastra Sahitya Parishad (KSSP), the Marathi Vigyan Parishad, the Assam Science Society and the Banga Vigyan Parishad are the more prominent among them. They began dissemination of information about science and technology (S&T) by publishing literature in various Indian languages. Of these, the KSSP in the 1960s and the 1970s grew into a mass organisation.

PICTURE COURTESY: TAMIL NADU SCIENCE FORUM

**A demonstration of a low-cost water-pumping device at the Children's Science Congress organised by the Tamil Nadu Science Forum in Dharmapuri district.**

The expectations and aspirations of the people that freedom and democracy will result in better lives and social justice for the economically weaker sections of society were belied. It was also clear that S&T had a major role to play in the transformation of society, and this meant that any forum unleashing a mass movement should have the underpinnings of S&T. However, S&T was getting institutionalised and getting alienated from the masses. The public good component of science was missing.

In order to work against these trends and enable people to have more say in how and where science, including the institutionalised variety, should be used, these emergent science communication organisations became the obvious fora. Over time, given the environment of political activism in the 1970s, these acquired the status of mass organisations. By the early 1980s, the use of the term `people's science' had become popular. The KSSP, which had coined the phrase, also invented the slogan `Science for Social Revolution'. It not only made popularisation of science a mass movement but mobilised the public on social issues in which S&T had a bearing. It also articulated its views on S&T policy issues. Inspired by the KSSP, more people's science groups got established in many States.

As Vinod Raina of Bhopal-based Eklavya, one of the best examples in the country of what a people's science organisation can achieve, puts it: "People's science demands examining the ethical, moral and political consequences of science in a larger sense, as also in specific instances. The two need not always be confrontational, and must involve not only debate, but also an active cooperation from time to time between the two for larger good."

Recounting the growth of the movement, he says: "Things, however, took a dramatic turn in 1984, barely two years after the formation of Eklavya, Although for extremely distressing and horrible reasons - the Bhopal gas disaster, which struck in December 1984. Eklavya took upon itself the task of creating a Jan Vigyan Samiti, a network of science-society groups in order to support the victims through technical, medical and scientific information and intervention, which included a spot survey of the water, air and flora and fauna, particularly vegetables." With the official organs woefully unprepared to handle such a massive tragedy, and with no factual information on the gas leak and its toxic effects coming forth to the public, the disaster had brought home starkly the relevance of the people's science movement.

This impetus had its own cascading effect. In 1985, the KSSP planned a Kala Jatha on the issue from Thiruvanathapuram to New Delhi. This was supported by various science groups, notably Eklavya, the Karnataka Rajya Vigyan Parishad and the Jan Vigyan Vedika of Andhra Pradesh. As the contacts among the various organisations grew, the concept of a Science Kala Jatha began to take shape. Twenty-six people's science groups came together and organised the nation-wide Bharat Jan Vigyan Jatha (BJVJ) in October-November 1987 with the support of the Department of Science and Technology (DST). The Jatha covered 500 centres in 14 States. Five *jatha*s, along with cultural or *kala* groups from five different regions of the country, gathered in Bhopal. The message was - science for peace, humanity, secularism and self-reliance.

The BJVJ's success was followed by the first All-India People's Science Conference (AIPSC), which was held in Kannur in Kerala in 1988. At this conference, the All-India People's Science Network (AIPSN), a loose coalition of people's science groups around the country, was formed. Today, the AIPSN comprises 40 organisations in 22 States committed to the use of science to promote equitable and sustainable development. Together, they reach an estimated 18,000 villages spread over 300 districts. The network has brought together students, school and college teachers, scientists, professional experts, writers, workers, farmers, political activists and thinkers on a single platform.

The basic philosophy of the PSM is that S&T inputs are essential to achieve the goal of an equitable and sustainable society although such inputs by

themselves are not sufficient. The PSM groups believe that the public needs to develop a critical understanding of S&T in order to be able to participate in the growth and application of S&T, especially in the choice of technologies in different contexts. Given the widespread illiteracy, let alone scientific illiteracy, it was also becoming clear that the efforts to propagate science awareness and create a scientific temper among the people should go hand-in-hand with efforts in mass literacy. In 1989, the KSSP undertook a massive literacy drive in the district of Ernakulam in collaboration with the district administration. The Parishad made use of its well-honed medium of *Kala Jatha* to reach out to the population. This proved to be a major success. The success led AIPSN to take up literacy as an empowerment programme in the campaign mode, for which it set up a separate organisation called the Bharat Gyan Vigyan Samiti (BGVS) with the primary responsibility of placing literacy on the national agenda. Indeed, literacy campaigns now form an essential component of nearly all the people's science groups.

**Students at a wetland in Tirthahalli taluk of Shimoga district in Karnataka as part of a science communication workshop.**

The PSM activities can be broadly classified into four categories:

1. Science Communication: Science communication is the basis for the movement in several States. It involves science teachers, working scientists and the science-qualified middle class and students. The activities include science publications, popular science lectures, street plays and school science activities. Cultural forms of communication are extensively used in the *Kala Jathas*. One of the sustained activities of the Haryana Vigyan Manch has been its campaign against superstitions and myths. For children, in particular, science popularisation by the PSM organisations have been through children's science festivals, children's science projects, quiz contests, science tours and children's science books. An annual Children's Science Congress is held shortly before the Annual Indian Science Congress and winners in the former participate in certain special fora of the latter. Besides, innovative science teaching methods are also propagated by some of the PSM groups.

Some of the well-known publications of these groups include *Chakmak* (for children), *Srote* and *Sandarbh* (for teachers) brought out by Eklavya; *Thulir* (in Tamil) and *Jantar Mantar* (in English) brought out by the Tamil Nadu Science Forum (TNSF). Many of the PSM groups have won national awards for excellence in science communication. These include the Haryana Vigyan

Manch, the Pondicherry Science Forum, the TNSF, the Karnataka Rajya Vigyan Parishad, the Madhya Pradesh Vigyan Sabha, Srujanika, the Assam Science Society, the Paschim Banga Vigyan Manch and the KSSP.

2. Policy Critiques: The forum of PSM allows scientists and professionals to critically evaluate state policies, not just S&T and research and development policies; study their inadequacies and propose alternatives. The idea being that a detailed critical understanding of developmental policies empower people's organisations to intervene in decision-making. Sustained interventions in the area of S&T policy and management are required if a people-oriented science-society linkages are to emerge. PSM groups have periodically intervened in this direction through advocacy and campaigns. The PSM studies and articulated positions have played a significant role in national debates on issues like nuclear disarmament, patent laws and intellectual property rights (IPRs), health and drug policies, energy and environment policies, reforms in the telecommunication and power sectors, panchayats and other decentralisation policies.

3. Development interventions: This has been a major component of the PSM's initiatives through mass campaigns and discussions. By developing pilot models in literacy, health, agriculture, credit cooperatives, watershed development, local/panchayat level planning programmes, promotion of small enterprises and their networking, the PSM groups have been able to intervene effectively in the decision-making process in several instances. These campaigns serve the purpose of people's resistance to unfair policies and highlight their demand for appropriate alternatives.

Specifically, for instance in the area of health, the interventions of the PSM have resulted in the withdrawal of a number of hazardous drugs from the market and initiation of legal action on a number of other drugs. The groups have also been active in the area of health education and more recently in decentralised health planning. A number of ongoing programmes are focussed on promoting community initiatives and building effective primary health care. These programmes also aim to empower women and develop a rural women's network. A major initiative in health has been that of the TNSF called `Arogya Iyakkam', a programme that covers about 1,000 villages in 17 blocks all over Tamil Nadu, where a local health volunteer is trained in the basics of child nutrition, maternal and child care, first aid and preventive and curative health needs.

In the area of environment, the PSM's activities have been largely in the nature of environmental education. In developing teaching aids, the PSM has integrated comprehensively environment as one of the crucial components of the modules and resource material developed by it. Advocacy and campaigns on issues such as the Silent Valley Project in Kerala, the Bhopal gas disaster and the ongoing Narmada dam project have had considerable impact. Initiatives in the form of policy-level critiques related to environmental issues during the Rio Summit, the Biodiversity Convention and the World Summit on Sustainable Development have been undertaken. An initiative of the TNSF, for instance, has been the reclamation of abandoned large water tanks across the State in order to make them usable once again. The Pondicherry Science Forum intervened effectively in the unbridled practice of aquaculture in Tamil Nadu, which was causing severe damage to the coastal ecology. This resulted in the enactment of a regulatory framework. The Himachal Gyan Vigyan

Samiti has initiated a project to study the frequent occurrence of flash floods in the State.

4. Technology Development: PSM groups have engaged in developing and encouraging people-centred technologies that are less capital intensive and empower a large number of people, workers, craftspersons and artisans. Some examples of such initiatives are: wireless in local loop for telecommunications, the simputer and village information software, bio-mass as replacement for cement/concrete in civil constructions, windmills and bio-mass based energy systems, non-chemical inputs to boost agricultural productivity, improved small-scale mechanised looms, small-scale oil presses and other food processing units, and mechanised black smithy. Roughly, once every two years, the PSM groups come together at the All India People's Science Congress (AIPSC) to review their actions, interact with experts, learn from their experiences and plan ahead. The Tenth AIPSC was held in Shimla, Himachal Pradesh, in October 2003. The PSM has come a long way from merely disseminating scientific information to involving the people in advocacy, discussions and interventions in science-related policy and developmental issues. The movement has gone from strength to strength to become a vibrant mass movement with practically every State having an active people's science group. The efforts of the PSM are becoming more relevant today as the adverse impact of liberalisation and globalisation is felt increasingly by the ordinary people and the state is gradually abdicating its responsibilities in education, employment, health and social welfare.