

# Unit 29

## People Science Movement

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### Learning Objectives

This unit will help you understand:

- the emergence of the people science movement and its aims;
- the basic issues and challenges confronting people science movement; and
- an overview of the activities of people science movement.

### 29.1 Introduction

Movements are about ideas - ideas that shape society and change the way we live and think. Building on this heritage, the science movement adds a new dimension to these progressive ideas - a critical understanding of science. 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.

This unit begins with a discussion of the emergence of the People's Science Movement (PSM) and its broad objectives. A convention of PSM held in Kerala, India for the first time initiated extensive interest and marked the beginning of PSMs in several parts of the country. A brief description of the same is presented in this unit. The activities of the PSMs are diverse and have been described here at length. The last section of the unit carries out an overview of some important PSMs functioning in our country.

### 29.2 Genesis and Aim

The 20<sup>th</sup> century has made the role of science and technology central to how society works. Not just in production, economics and war but also in sharing public opinion, in defining culture, in politics, in music, in government science plays an important role today.

The impetus and inspiration for science-based social activism came not from a mere desire for dissemination of information on natural sciences but largely from the disillusionment of concerned intellectuals, mostly in the younger age group, with the official thinking and action in alleviating mass poverty and unemployment and its concomitant degradation of human condition. Groups engaged in science education and dissemination became conscious of the new challenges. From acquiring and disseminating knowledge to applying it with a view to changing society meant the rationalisation of a more active role for the intellectual community than was understood hitherto.

The people science movement aims at a critical understanding of science. It informs the common people on what science is being done, how and why, i.e., analysing policies, educating people and mobilising public opinion on issues. It further works towards constructing a rational society by explaining natural phenomena using science and countering irrational beliefs and superstitions. By initiating programmes such as training teachers to use innovative teaching methods, training village women to use health information, training farmers to experiment and use science to improve the soil, etc., mobilising the poorest and putting into practice the promise of science – improving living conditions.

People Science Movements have a history of credible interventions in the area of improving conditions of social groups, often disadvantaged, through science and technology inputs. PSMs are diverse in constitution and organisational form, and in the nature of their activities. Some focus on the unscientific attitudes and policies towards such basic issues as health, while others are engaged in highlighting the adverse impact of development activities as a result of inadequate/wrong application of science and technology in the field of the environment. Still others demonstrate innovative ways of teaching science, the use of scientific knowledge in the area of health, non-formal education, appropriate technology, housing, etc. The basic philosophy of the PSM is that Science and Technology (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 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.

#### Reflection and Action 29.1

Broadly speaking, what were the main objectives of the people science movement?

### 29.3 A Brief History

The origin of PSM in India may be traced to the early 1950s when a number of organisations got engaged in activities aimed to create scientific awareness among the general public. The Kerala *Sastra 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 by publishing literature in various Indian languages. Of these, the KSSP in the 1960s and 1970s grew into a mass organisation.

A Convention of PSM was held for the first time in India in November 1978 in Trivandrum under the auspices of Kerala *Sahitya Sastra Parishad* (KSSP). Since then, there has been an intensification of the interest in initiating a PSM in several parts of the country. The need was then felt for a second convention of PSM, which was hosted by KSSP in Kerala. The concern of the convention was focused on the need to define a PSM, which should form the basis of an all-India perspective so that programmes and activities initiated would have a clear-cut direction and purpose.

Four areas were identified for a future programme of action as the basis for initiating a PSM in the country. i) Health ii) Education iii) Environment iv) use of Arts as a medium of communication with the people.

After extensive discussion a few common programmes were chalked out one each of these subjects so that joint action could be initiated throughout the country.

**Health:** Questions were raised on the relevance and adequacy of the existing health delivery system and hence a people's health movement should form a crucial component of a PSM. Despite expansion in health services, the actual distribution has an urban and curative bias.

The objective necessity of joint action at the all-India level, the possibility of involving non-professionals in such action programmes and the availability of resources and manpower for implementation were considered. The convention noted that the role of indigenous medicines as a possible alternative should be scientifically examined. The irrationality of the anti-diarrheal drug combinations should be emphasised and people should and can, be educated on such simple measures as Oral Rehydration Therapy (ORT) for managing diarrhea. The inter-relationship of diarrhea and unsanitary living conditions, lack of facilities for sewage disposal and above all malnutrition and poverty should be emphasised in such campaigns.

That joint action on health problems specific to women should be taken up was generally felt as highly urgent. A campaign on anaemia in women is a major issue. Propaganda against the irrational anti-anaemic drugs, demand for better medical facilities during pregnancy, prophylactic measures against anaemia and the root cause of anaemia as poverty and the poor socio-economic condition were highlighted.

**Education:** The most burning issue in the field of education was the failure of the Government to implement UPE, which was closely linked to the need of Adult Education. It was decided to emphasise the need for activities aimed at increasing the involvement of teachers in popularising science as well as in discussing problems of education in general. The following activities were suggested as being useful in further work:

- a) Bringing out magazines for children to popularise science and literature as is done by groups like *Kerala Sastra Sahitya Parishad* (KSSP)
- b) Organising community science centers with a library, workshop, audio-visual facilities and mobile exhibitions.
- c) Use of art and theatre forms as catalysts media for dissemination of PSM ideas.
- d) Field study and surveys of the problems of education to base the initiative and understanding on more firm grounds

**Environment:** Environmental problems can only be understood as an aspect of the broader reality. A scientific analysis of the totality of the interconnections between seemingly unrelated issues is the only viable basis for effective action. The Forest Bill, which gives extensive powers to forest officials, encroaches on the right of the people such as tribals who depend on forests and facilitates the acceleration of the process of deforestation by commercial vested interests. The issue of the Forest Bill is a focal point for people science movements. Not only can it enable them to assist people's struggles but it can enable the mobilisation of public opinion on a whole range of issues - social forestry, floods, wildlife, drought, etc.

Development projects are carried out without attempting to analyse their impact on the environment. A broad consensus emerged from the discussion on environment:

- a) Vested interests benefiting from environmental degradation are actively assisted by the State.
- b) Science is not value-neutral but used to assist vested interests. For instance, forestry science is used to justify deforestation by the forest department.

- c) PSMs must base their views on scientific analysis of problems and vested interests in science.
- d) Conservation of the environment is not possible unless people's struggles are channeled to counter the policies of the State and the power of the vested interests.

On the above basis it was argued that joint action be initiated at the national level on:

- a) Breaking the communication gap between PSMs, informing each other about problems faced, tactics used and problems encountered;
- b) Circulating policy studies such as the critique of the Forest Bill and studies on occupational safety for wider dissemination;
- c) Exchanging visits;
- d) Producing such other materials for exchange and dissemination; and
- e) Forging a united front against the Forest Bill.

**Art:** A great deal of discussion took place on using art as a medium of communication with the people. The Uttarakhand *Sangharsh Vahini* had been using art in its various struggles first against deforestation and similar issues but now embracing all aspects of the people's struggles. Out of such struggles, songs, poems and plays evolved these sentiments.

It was felt that efforts should be made to exchange not only the experiences but also the performances of different groups using art as a weapon in creating people consciousness. This would not only enrich each other's efforts but also create a feeling of solidarity amongst people. Through such interchange they could see and understand the linkages between their micro and macro situations. Mutual exchange of visits, translation and adoption of the material used by different groups were viewed as a useful task.

**Reflections and Actions 29.2**

Discuss the programme of action identified in the PSM convention.

## 29.4 Some Fundamental Issues

Apart from identifying common areas for joint action, certain fundamental issues were raised in the convention regarding the various approaches to the concept and relevance of PSMs in India. One view contends that the PSM should concentrate on the issue that falls on the interface between science and society. Hence the concern of the PSM should be on the natural science content of such issues. The PSM should provide "scientific information" for effectively carrying out people's struggles by mass organisations. In such a conceptual framework, the PSM has a large area of autonomy in terms of dissemination of information, sensitising the scientific community, suggesting solutions to social problems whenever there is a strong content of science and technology and above all creating a scientific attitude among the people and their organisations.

It was argued that this view was inadequate and restricted. "Science" should emphasise the need for an alternative method for understanding and analysing social issues. This view contended that the link between natural and social sciences is organic and they are not separate. In every social issue there is a natural science content and vice versa. The emerging social contest requires a PSM which, apart from helping other mass organisations, also establishes its own territory by directly going to the people as certain issues and situations require independent intervention of PSMs.

Another view held by some put forth the argument that the concept and meaning of science as used has been derived from the western tradition, which is not too relevant to our context. An attempt should be made to turn to an indigenous concept of people's science, and on that basis build a perspective for science based social activism in the country. However serious doubts were raised on the indigenous concept of science

## 29.5 Activities of PSMs

The PSM activities can be broadly classified into four categories:

- a) Science and 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 or communication are extensively used in the *Kala Jathas*. One of the sustained activities of Haryana *Vigyan Manch* has been its campaign against superstitions and myths. For children, in particular, science popularisation by the PSM organisations has been through children's science festivals, children's science projects, and quiz contests, science tours and publication of 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-know 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 Parisha, the Madhya Pradesh Vigyan Sabha, Srujanika, the Assam Science Society, the Paschim Banga Vigyan Manch and the KSSP

- b) Policy Critiques: The forum of PSM allows scientists and professionals to critically evaluate state policies, not just science and technology and research and development policies. They should point out the inadequacies of such policies and propose alternatives. The idea behind this is to provide a critical understanding of the developmental policies, which would empower people's organisations to intervene in decision-making. Sustained interventions in the area of science and technology policy and management are required if 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 nationally debated 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.
- c) Development interventions: This has been a major component of the PSMs 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, 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 PSMs 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 focused 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 PSMs 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 regulatory framework. The Himachal *Gyan Vigyan Samiti* has initiated a project to study the frequent occurrence of flash floods in the state.

- d) Technology Development: PSM groups have engaged in developing and encouraging people-centered 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 computer 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 blacksmithy.

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 impacts of liberalisation and globalisation are felt increasingly by the ordinary people and the state is gradually abdicating its responsibilities in education, employment, health and social welfare.

#### Reflection and Action 29.3

Some PSMs have been discussed in this unit. Find out about some more and learn about their activities and achievements. You may also visit a Block/Village and write a report about programmes initiated by the PSM there.



## 29.6 Some Prominent PSMs in INDIA

Let us now examine the functioning of some PSMs in India.

**Kerala Sastra Sahitya Parishad (KSSP):** One of the earliest groups to use science in the activist sense was KSSP. The slogan “science for social revolution” was launched by KSSP to emphasise the relationship between science and society in shaping the lives of the people. On the premise that science and technology are usually used by a minority to exploit the majority, KSSP sees science education as vesting people with the power to analyse social issues scientifically and thus inform their social action.

Public attention was focused on this movement during its fight to save the unique Silent Valley when a hydro-electric project was planned and exposed the unscientific and wasteful electricity and irrigation policies pursued in the State. It also takes part in the fight against the irrational drug formulations, harmful drugs and their high prices. KSSP is leading the fight against the Birlas’ pulp factory at Mavoor, Calicut, which is criminally polluting the air and water around.

KSSP is widely known all over India because of the very successful *Sastrakala Jatha* held every year from October 2 to November 7. The *Jatha* is a massive effort, which attracts thousands of people from all over. Science, in its broad sense, is taken to the people through the media of i) printed wordbooks, pamphlets, posters ii) arts-songs, street plays, skits, folk art, etc.

The activities of the KSSP have spread into varied fields of human endeavor. The KSSP include thousands of professionals, students, activists. KSSP relentlessly continues helping the people understand their own physical and social environment, the various forces and counter-forces present in it and thus enables them to analyse the situation for themselves.

### Box 29.1

KSSP was instrumental in the success of the literacy campaign for 100% literacy in Kerala. It is a member of the All India People’s Science Network (AIPSN). It has won many awards including the 1996 Right Livelihood Award “for its major contribution to a model of development rooted in social justice and popular participation”

### Tamil Nadu Science Forum (TNSF)

The TNSF is a people’s movement that has been mobilising and empowering the underprivileged to help themselves since 1980. The group was started by research scientists from IIT and IISC who soon realised that critiquing the science policy and mobilising people was not enough. They had to develop solutions that could be used by the common man. They developed alternate models in literacy, education, health, enterprises and agriculture. Through these models, it was attempted to restructure science-learning techniques.

This was followed by training teachers to use innovative teaching methods, village women to use health information, farmers to use science to improve the soil. Each district tried its own experiment on social development self-reliant saving scheme (Kanyakumari, Virudhunagar), health training programmes (Ramnad), training volunteers to provide individual advice on children’s and women’s needs, enterprises for women (Madurai), quarry contracts for women’s groups (Pudukottai), working on school dropouts (Villupuram and Guddalore), and support shelter for women victims of violence (Ramnad). A lot of experiments were conducted in these areas and those which worked started spreading.

The focus of TNSF is now on integrating and expanding ideas that they have worked on. In education these are innovative teaching method centers. These ideas are being nurtured and spread to new blocks. These programs

reach out and save thousands of children from malnutrition, and dropping out of school, while helping lakhs of women with credit enterprise and health skills and help farmers improve the soil and the yield.

The strength of TNSF lies in its ability to campaign on larger issues while at the same time demonstrating how these ideas actually improve the lives of the poor

#### Medico-Friend Circle (MFC)

MFC is a group of socially conscious individuals interested in the health problems of our people. It is geared towards evolving an appropriate approach to develop a system of medical care suited to the needs of the vast majority of the population.

MFC stands for popularisation and demystification of medical science since medical knowledge has been jargonised and mystified to enhance the status of the medical profession. Since medical intervention has a curative bias, MFC draws attention to the fact that health problems on the social scale can be primarily solved by preventive and social measures carried out with the active participation of the community and for decentralisation of responsibilities whenever possible.

#### Reflection and Action 29.4

Science affects all of us. Using science in our daily lives to improve and raise our living standards requires a scientific outlook, education and awareness. Reflect on the contribution of PSM towards this aim.

### 29.7 Conclusion

A people's movement aimed at ultimately reordering our society on rational, scientific lines requires the growth of the scientific attitude among the people. A major challenge is to fight superstition, myths, obscurantism, communalism, fatalism, etc., as they are deeply entrenched in the social fabric. At the same time, a mere rejection of these forces without understanding the socio-economic compulsions would be improper. Faced with such a dilemma in the Indian context, PSM has to steer an alternative course for progressive social transformation. It has to combine the best elements in one's tradition and the accumulated fund of human knowledge the world over. What is to be rejected is neither "tradition" nor "modernity" but all those elements which stand in the way of human progress towards a more civilised form of social life. Such a transition will not be complete without the participation of the people. If such a participatory process has to be initiated, the absence of the scientific method and the widening gap in human knowledge has to be narrowed down. It is in this process that PSM sees its role. The dynamics of this process is such that "learning" leads to action, which in turn leads to furthering and enriching the process of understanding. The ways through which entry points this process has to be initiated will be largely dictated by one's immediate social environment.

A counter-culture imbued with a spirit of inquiry with detached, accurate observation and experimentation would definitely be conducive to enhancing the group and the quality of people's movement. Unless people start questioning their existing condition, try to understand the whys and hows of their problem; a people's movement cannot achieve its aim. PSMs' contribution would be of use in creating a spirit of lively inquiry amongst the people towards a movement for a new world.

It is explained in this unit what is people's science movement its aims and objectives. We have also seen how this movement is emerged in some parts



of the country and spread to other parts of it. The movement attempts to elicit scientific basis to the people's day today activities and thereby make use of scientific knowledge for mass development. The expansion of the movement clearly shows the popularity and the people's acceptance of this movement. Finally the unit also looks into the activities of some major organisations, which strengthens the people's science movement through their diverse activities.

## 29.8 Further Readings

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