

INDUCTION OF AGRICULTURE IN SCHOOL CURRICULUM

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'Indian wisdom has always perceived human beings as an integral and central constituent of nature. Man's desire for a long, healthy, enlightened and joyful life has made him invoke the forces and elements of nature, usually in a deified form, to bless him and his progeny. Logically, therefore, loving, understanding, fearing and befriending nature, not conquering, exploiting or defiling it, was a general way of living in ancient India. The following wish occurring in our ancient prayers unambiguously proves this man-nature relationship.'

Let there be rains at regular periods;

Let the earth remain green;

Let there be no unrest in the nation; and

Let the noble people have the courage to speak out their mind.

The rich and diverse religious and cultural traditions of India, including its tribal religions, include profusely rich conglomeration of beliefs about nature and rules for the sustainable utilisation of material resources. Man is exhorted to conserve these elements for his welfare and prosperity by scrupulously performing his duties prescribed in this regard in the various

texts of the Vedic period. Thereafter, the epics offer astonishing wealth of flora and fauna and the ashrams of sages. These represent a very healthy ecological management and a remarkable relationship between man, the animal world and nature. Health, happiness and harmony for all are ensured through a perfect balance between material satisfaction and spiritual advancement resulting in an ideal quality of life.

Budhism and Jainism advocated a high degree of human satisfaction through austerity and extremely low rate of consumption of resources. They both underlined the value of maintaining harmony between man and nature and man and man. They also prescribed the principle of minimum destruction of living and non-living resources for satisfying man's needs.

Even in later religious and cultural literature belonging to Zoroastrianism, Christianity, Islam and Sikhism an unambiguous message is given that man, the best creation of God, is only a part of Nature. He is enjoined to make wise and responsible use of it, treat it as a God-given gift and feel God's presence in all its manifestations. All this, basically, made man realise the oneness of life in the entire world and the process of evolution much before Darwin could think of it. The Holy Quran includes references to elements, forces and laws of nature, their functions and utility and cautions man against their indiscriminate destruction. Man must not misuse, exhaust or upset the forces and elements of nature.

Gradually, man started thinking of himself as a separate, superior entity with endless hunger for power, prosperity and prestige. Forgetting his harmonious relationship with nature, he used his intellect to overpower and conquer it. The crisis caused by man's criminal neglect of nature has several obvious manifestations today. Almost 50 per cent of the land is eroded, degraded and robbed of its fertility. The extent of damage done to the world's biological diversity and eco-system can not be assessed. Our renewable and non-renewable resources have been alarmingly depleted. Because of man's reckless industrial activity and increasing population pressures, our atmosphere, water, land and food are polluted and contaminated. These and the general degradation of human habitat are already resulting in endless miseries and calamities.

Now it is being increasingly realised all over the world that living a harmonious and healthy life on this planet earth is man's greatest need. He

has nowhere else to go to. Understandably therefore, humanity needs a new relationship with nature, a healthier bond between the 'Self' and the 'Surroundings', a new set of cultural values and a 'paradigmatic shift' in the global vision of earth-man relationship. The two 'Earth Summits' – the first one held in Stockholm, Sweden in June 1972 and the second one held in Rio de Janeiro, Brazil in 1992 – discussed manmade global warming and the depletion of bio-diversity. Declarations of far reaching consequences were made at these Summits. In the international context, the Report of the Club of Rome in early seventies of the last century strongly advocated the environment factor. But the remedy prescribed, i.e., 'No-Growth' was a bitter pill. It was followed by the Report of the Independent Commission on International Development issues under the chairmanship of Willy Brandt, 'North-South: A Programme for Survival' (1980). The Brundtland Commission Report (1987) really looked closely and critically at the environmental issues. This Report also provided an explanatory link between Third World poverty and global environmental deterioration. It also generated intellectual awareness of a new type of growth, i.e., 'Sustainable Development'. The World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002 had the same theme.

Indian Scenario

India is fundamentally an agricultural country, rich in land, water and human resources. India can establish its individuality in the comity of nations only if it drafts a plan that effectively utilises these vital resources effectively and only then can economic development of the country be sustained and be lasting.

Mahatma Gandhi had the vision and farsightedness to identify this fact and set this goal before the nation. We have, after independence, modernised our agriculture and set it in the path of faster growth and development. This has enabled us to reach self-sufficiency in food production, despite the phenomenal increase in the population.

The plans that were designed initially were intended for a population of about 40 crores. But the population of the country has touched 100 crores within a period of 50 years. We have been able to rise up to this challenge of explosion in the number of people and maintain a level of self-sufficiency, without having to depend on other countries for our food needs. Despite

being ploughed, tilled and harvested for thousands of years, India still remains a virgin land. We have not fully utilised the land, water and human resources which abound in our country.

Five years have passed since the commencement of this millennium. It is our desire that the condition that is prevailing today would change at least from now on. India is progressing by supporting and enabling the growth of villages and village industries. There are about 80,000 villages in the country. The scenario is changing to a large extent now. People who are living in the villages have set their eyes and minds on factory and office jobs in the cities and the exodus towards towns and cities is on the increase. This cannot be helped in a situation where the village population is not able to get adequate income and where lifestyle does not change for the better.

For a country like India that has quite a huge population, the advances in science and technology pose a problem and that is of providing decent employment to its millions. These developments reduce the dependence on human element and therefore naturally lots of people remain under-utilised, if not unutilised. At the same time, there is a need to modernise Indian agriculture. The Agricultural Universities have been spending their time and resources mostly in research and development and also on inventions. It is most important to identify and plan to implement such developments in our agricultural practices.

Technology occupies the place of importance in our system of education. We are expanding the horizons of technology on many different and varied fields like computers, electronics, automation etc. But we are not paying sufficient attention or taking adequate interest in developing and implementing plans that would encourage the growth of technology that would support the growth of agriculture.

There should be an experts committee for designing the syllabus for agricultural education consisting of agricultural scientists, state level senior developmental officers as also seasoned agriculturists. The agricultural education should be well diversified and categorised as it is in the field of technology. These divisions should ideally consist of the following:

- Irrigation and plantation methods for dry lands and a similar division for wet lands.

- The technology required for cultivating flowers, vegetables, grains, fruits, mushrooms etc.
- Imparting knowledge on the pests that infest plants, the diseases that affect them, weeds, parasites etc. and ways of fighting them and protecting the plants should be introduced.
- Related activities like cattle and sheep farming, collection of honey, cultivating flowering plants, rabbit farms, piggery, chicken farm, fishery etc., are to be encouraged and aspirants should be trained in these areas effectively.
- In addition to the above, proper training should be imparted on the use of machinery, equipment, vehicles etc. and also the art of maintaining them and repairing them.

Most important of all, the students should be trained in marketing agricultural products. The syllabus can also include handicrafts, small scale village industries, afforestation and ways of protecting forests, etc. and would open out new vistas of employment opportunities. This is very essential especially in the wake of globalisation that has been set in motion, which necessitates the production of quality foodstuff and affordable prices. That would add an effective cutting edge to our agricultural produce. Laying stress on agriculture is most important for our country, as India has been an agricultural country for thousands of years.

Unfortunately, introduction of agriculture as an area of study in the schools was not considered for a very long time. Only in the last decade the awareness is slowly coming in. It is in this context that Agricultural scientists and officials of the Department of Agriculture have been urging the Government to include agriculture as a subject in the school curriculum, which is a call for the revival of the multipurpose schools that were opened after Independence.

There is a need to include agriculture in the curriculum, as a large number of students from farmers' families drop out from school and take up agriculture. Many farmers are unaware of the Government's policies, commodity prices, market intervention scheme, Yeshasvini scheme, and how to approach extension officers.

The Government of India thought over this issue of giving importance to agriculture in the school curriculum. A good deal of the necessary content has been introduced as a part of the Environmental Education. Some more aspects are brought in as part of the Social Science syllabus.

The National Policy on Education _ 1986 (renewed in 1992) stated: " There is a paramount need to create a consciousness of the environment. It must permeate all ages and all sections of society, beginning with the child. Environmental consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire educational process."

The National Curriculum Framework for School Education (NCFSE)_2000 also highlights the need for including environmental concerns at all the levels of schooling. It asserts the Fundamental Duties (Article 51 A of part IV A of the Indian Constitution) : "...protect and improve the national environment including forests, lakes, rivers, wildlife and to have compassion for the living creatures... "(Common Core Components, p.36). As one of the General Objectives of Education, it mentions "understanding of the environment in its totality, both natural and social, and their interactive processes, the environmental problems and the ways and means to preserve the environment." (p.40)

It has been felt that although a fair amount of information about the environment is being given through textbooks, it has not succeeded to generate a concern that may lead to effective action for conserving and further improving the environment. In such a field of global concern, it may not be half so important to know as to feel and be motivated to act. Therefore, the further course of study in EE should emphasise the emotional and attitudinal aspects of the learners` personality along with the requisite cognitive component most of which is available in the different subject textbooks, anyway. Thus, it is argued, a value based, action oriented course of EE would lead from knowledge to feeling and finally to appropriate action. This alone would bridge the wide gulf between the avowed intent and the actual implementation of a programme that concerns the present and future of the entire humanity on earth.

In pursuance of the responsibility entrusted by the Hon'ble Supreme Court of India to the NCERT to prepare syllabus of EE for the different stages of school education, an Environmental Education Group (EEG) was specially

created in the Council on 24th December 2003. The first logical step taken by the EEG was to analyse the existing school syllabi and textbooks from the point of view of EE. Subsequently, the EEG reviewed the literature on EE available in the field like books, awareness and instructional materials, research publications and various reports. The related literature available on internet was also reviewed. The NCERT, with a view to utilising the vast experience, wisdom and expertise available in the country, approached a large number of individuals and institutions actively engaged in promotion of environment and EE in different parts of the country.

In order to ensure an extensive and thorough discussion on the draft syllabus prepared and on certain major issues crucial for the introduction of EE in schools, a two days National Consultation Meeting was organised in the NCERT on 13-14 February 2004.

With a view to proposing an effective implementation strategy, second National Consultation Meeting for one day involving the Directors of SCERTs and Chairmen of Boards of School Education was organised on 13 March 2004. The major issues deliberated upon in this meeting were:

- EE in school curriculum: its place in relation to other subjects in terms of weightage, time allocation and teacher preparation
- Strategies of evaluation
- Management of implementation : Provisions and mobilisation of resources, monitoring and supervision, support system and networking

There is a nationwide commonality of perception regarding the major concerns and issues of EE. These include:

- Concept and meaning of environment
- Components of environment
- Natural resources
- Pollution and related problems
- Current environmental concerns and interdependence between man and nature
- Energy management
- Toxicology
- Health hazards
- Agriculture and environment

- Ecology/ecosystem
- Bio-technology and environment
- Sustainable development
- Population and development and the quality of life
- Environmental policies and legal provisions

Some of the common field based projects and activities suggested are:

- Segregation of waste
- Vermi composting
- Safe dumping
- Testing of water quality
- Safe sewage disposal
- Rainwater harvesting
- Tree plantation and maintenance of school gardens
- Protection of plants of medicinal and economic value
- Management of water bodies
- Pollution growth and environmental quality
- Food adulteration

In addition, some of the local environmental challenges, issues and concerns could be identified and prioritised.

The seriousness with which the government took up this issue of environmental education with a fair thrust on agriculture made most Boards and State governments to follow it up earnestly and the syllabus has been introduced during the year 2003.

The I.C.S.E. has introduced a full paper of 100 marks in Agriculture as an optional subject at the ninth standard itself. It has allotted 80 marks for theory and 20 for internal assessment. This is carried forward for the tenth as well. It tries to give a fairly comprehensive account of the agricultural practices prevailing in India. Even in the eleventh or the twelfth classes the student can choose agriculture as an elective.

From the year 2003 - 04, the Central Board of Secondary Education that monitors a large number of schools in the country including the Kendriya Vidyalayas, has introduced agriculture as a separate paper from class ten itself. This is in addition to the fair degree of content in agriculture

introduced from the primary classes under Environmental Education and also in Social Sciences. The complete paper on agriculture carries 70 marks while 30 marks are allotted for the practicals. A large number of appropriate projects have also been suggested to give the students hands on experience.

The I.S.C board has provided enough opportunities for the child to understand agriculture in every class under Environmental Education. But the content is really rich in classes eleven and twelve, where 70 marks are earmarked for the theory component and 30 marks are for the practicals.

In addition to these Boards that operate uniformly across the country, every state government has dedicated about 12 to 15 % of the total syllabus to agriculture.

In comparison to the I.C.S.E. or the C.B.S.E. curricula, the State curriculum has not shown the same seriousness. It seems to be more structured and rigid. It neither shows the depth of content nor the flexibility. It has introduced agriculture as part of environmental education in bits and pieces. When a subject as important as agriculture is introduced, it is appropriate to arrange the content in a concentric manner. It should be placed layer by layer in the increasing order of complexity. Thus a student would study the entire subject at an appropriate pace and order. Adding a small concept in one class and another small concept in another class does not enthuse confidence neither in the teacher nor in the taught. It does not envisage a significant practical component. Even after 2003, when the other Boards seriously accepted the challenge of introducing agriculture in the school curriculum, the state curriculum shows no such intent. It can draw inspiration from the efforts of the Rajasthan Government. The Lok Jumbish is truly an excellent way of introducing a course such as agriculture where locals and practicing agriculturists are involved in imparting the subject.

As regards the quantum of curriculum in agriculture introduced in general schools, it should be considered adequate. 15% of the syllabus is a considerable proportion for a general course. It should be remembered that they are not primarily agricultural schools.

But, the area of concern is not the content but the delivery mechanism. Presenting an attractive syllabus is one thing and reaching it out to the

students with the same passion is another. A cursory observation about the way this curriculum is administered leaves much to be desired. Most of the schools, particularly the urban schools where many teachers themselves do not have a proper grounding in agriculture, handle this component as they handle any other subject, say, history. It remains an unexciting, monotonous drudgery where the content is to be remembered than a vibrant field of knowledge to be assimilated. Seldom are the projects carried out. For the sake of marks, the same projects are recycled. Hands on experience is a rarity.

This is the story of all our ambitious projects. We have the best brains working to plan the proposal; very intelligent minds to draft beautiful reports and action plans. All these get translated into reality only when they are matched by willing and earnest hearts keen to pass on the conviction to those for whose sake the plan is drawn out.

Hence, our efforts should be channelised not to increase the content of agriculture in general schools but to ensure the empowerment of the delivery mechanism. Only a good means serves the end.
