

ENVIRONMENTAL EDUCATION – AN URGENT CHALLENGE TO MANKIND

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In recent years the total deterioration of human environment, in the first place of its natural component, became the most urgent challenge of mankind, being a question not only of its present and future economical, physical, mental and social welfare but also of its survival at all. This problem is clearly one of worldwide importance. The first necessary steps to make human society aware of the totally unpleasant situation and to start immediate improvement has been undertaken by UNESCO (Biosphere Conference, Paris, September 1968 and preparation for MAB international programme 'Man and Biosphere') and further by UN (agreement on UN Conference on Human Environment in 1972). The main reason to hold the UN Conference was expressed briefly but clearly: 'because there is a world environment crisis' (UN General Assembly, 3rd December 1968). A better, wiser use of natural resources, landscape and the environment as a whole, request a basic change of Man's relations with Nature. This is a matter of both practical and ideological approach. The modern 'Man's partnership with Nature' has to be achieved through appropriate education emphasising a real perspective ecological thinking. It has to reach all general public. It's tragic that ecological

understanding is not a prerequisite for policy making (Prof. Laumont C. Cole in 'Canadian Audubon', 3015, Dec. 1968, p. 132).

It is necessary to influence the approach to the biological problems that surround us; every community has its difficulties with pollution, sewage disposal, the misuse of pesticides, neglect of parks, unnecessary deforestation and, of course, family planning (Kenneth V. Thimann in Bio-science' 18/12, Dec., 1968, p. 1101). The great challenge to mankind is an appeal for proper education.

In the same way in which the nature conservation movement began to make the public opinion conscious of the modern civilisation's danger for mankind by the impact on its natural environment, conservation education was trying to seek and to outline the principles, methods and forms by which to create an up-to-date 'man's partnership with Nature'. Since 1948 these educational activities are coordinated on a wide international scale by the permanent Commission on Education of the IUCN (International Union for Conservation of Nature and Natural Resources) Therefore because of one year-long experience I would like to explain briefly our main thoughts about environmental education.

What is 'Environmental Education'?

There has been just a lot of research carried out during this century on the problems of change in the human environment and on the techniques for its design and management. So there is the knowledge available, but the application of it is inadequate and slow. There is still insufficient public awareness of the relationship between Man and his environment, arising from inadequacies in our education systems. (Dr T. Pritchard in 'Biological Conservation' 1/1, 1968, p. 27).

By 'Environmental Education' we understand all kinds of education and information which aims at creating the correct approach of Man to his (natural) environment in the sense of conservation, wise use and management.

Although 'ecological thinking' is the basic feature of this correct approach and, consequently, of environmental education, this education by far cannot be only a matter of science and specially, biology teaching. Environmental education focussing on modern conservation of Nature and natural resources and landscape planning and management including not only scientific but also broader cultural, economic, hygienic, aesthetic and ethic aspects is an essential part of general civic, moral and liberal education. By its ideology it has to determine Man's philosophy concerning his relationship to Nature and landscape as well as his role in society, living in this Nature and landscape and using them as the basic component of its whole environment. As practical instruction it has to influence and even to correct Man's behaviour in the wise use of his environment providing him with basic principles and rules of such behaviour and action. Facing the

dangers of many-sided environmental pollution and deterioration in our modern world, this philosophy and rules of acting are of equal importance along with mental and physical hygiene, being in fact also a compound of it, because Man himself is the most valuable and at the same time the most powerful resource of the Biosphere.

Concept and Function of Environmental Education

A short concept of environmental education was compiled by the Education Commission of the Unesco Biosphere Conference. It is presented in the following paragraphs:

- (i) The critical problems of the biosphere urgently require the development of environmental education to form an attitude of man and his society towards the biosphere in the sense of rational use and conservation of natural resources and the unity of the landscape.
- (ii) The basic principles of environmental education, interpreted according to possible levels and purposes, should be: to maintain and wherever possible to enhance the economic and social capital of the biosphere; to provide an integrated scientific approach to the planning, management and development of the environment as a unit in space and time; to seek man's personal fulfilment in partnership with Nature through and with natural forces: and to develop a policy of trusteeship for posterity.
- (iii) Environmental education is required in different depths, according to the level of

education being provided and the objectives being pursued, and should reach: specialists in different occupations dealing with both biosphere management and education in order to fulfil effectively the principles set out above: adults in order to guide children and young people, to develop criteria by which they can judge policies and practices affecting their environment and, generally to enrich their lives; and children and young people, as part of a scientific and liberal education, to enable them to enjoy the environment and use it wisely.

- (iv) All available media should be employed in an integrated as well as continuous and sustained programme of education and information about the environment. Each country should have a council, centre or similar institution for environmental education and these activities should be coordinated on an international scale.'

The function of environmental education can be more readily seen and appreciated if the groups of people are considered who will make an impact on the environment and who have to be educated and trained properly in the light of their role in society (quoted from Dr. Pritchard's article on page 2 of this report):

- (i) Firstly there are those who will embark on a career in the earth and life sciences, including biologists, geographers, geologists and agricultural and forest scientists, as well as farmers and foresters.
- (ii) Secondly, there are those who, as planners, landscape designers, architects, civil engineers and the like, will deal with the design, construction, and control, of projects affecting the environment.

- (iii) Thirdly, these are those destined to become physicists, chemists, and technologists, whose research and development work may severely affect the environment.
- (iv) Fourthly, there will be the future statesmen, public servants, and other leaders who will locally, nationally, or internationally formulate policies and authorise actions having far-reaching effects on the environment.
- (v) The fifth group and probably the most important in the long term, will be those who, as the educationalists of the future will have the task of interpreting knowledge to young people.
- (vi) The last group includes those who, without any direct professional involvement should have sufficient interest to form a collective voice which will influence those in the previous categories.

System of Environmental Education

The environmental education, in order to be effective, has to be carried out as a united education system including both children and youth as well as adults, formal education at all levels (pre-school, primary and secondary schools, high schools, colleges and universities, post-graduate studies), out-of-school education and activities and all sort of information, and all this must be well integrated within the general education systems. Environmental education is not to be considered as a specialised matter of science education only as it provides some important general educational benefits which shall be pointed out in the following paragraphs.

Environmental education at its present development stage does not exist as a necessary, integrated, continuous and sustained programme. The elements of it occur in science, especially biology teaching, are developing at some universities (special chairs and institutes), within the activities of some youth and adults voluntary organisations and promoted by some mass-media. In general however, there is a lack of proper integration.

However important it is to have an integrated environmental education system, there exist some items of it which deserve the highest priority. This should be given to teachers' and other educators' training and further (post-graduate) education, to the role of ecology and creative conservation in university training of technologists (engineers), sociologists, economists and politicians and to the out-of-school education and activities of children and youth.

Pre-School Level

From his first day, the formative young child has to make the first acquaintance with his environment, with other living organisms, earth, water, air, weather etc., and to learn how to enjoy and protect it. The education merely through the parents with increasing role of kindergarten has to form a sensitive approach to the environment, its beauties and importance for Man. Also the role of picture-magazines and TV should not be neglected.

More studies on child psychology, mental development and best educational methods are still needed. The effort of education at that age, depend in the first place on the education of parents and on the training of creche and kindergarten staff.

Primary and Secondary School

The main 'environmental subject' at primary and secondary school levels is Nature History and Biology. In many countries environmental and conservation education at that level is being considered as one of the principal educational tasks of science and especially biology teaching. The approach and space given to environmental education in school-curricula and textbooks, however, usually does not correspond with the promoted importance of it and with actual needs. The curricula and textbooks remain overloaded with morphology and description of classes, families genus and species, but try to be up-to-date by emphasising genetics and molecular biology. Generally, they are neglecting ecology which is yet the principal means of environmental education.

There is an urgent need for revising the school curricula and textbooks in science and especially biology teaching. Environmental education should penetrate all this teaching, illustrating by examples the applicability of science to the improvement of Man's life and through this approach at the same time giving a sound appreciation of science and better understanding of its principles.

In view of the broad interdisciplinary character of environmental science also the environmental education can embrace not only simple biology and earth science but also chemistry and physics, mathematics, history, arts and literature into which he has got to infiltrate. In many countries a good unity of approach is imaginatively taught at the primary school level. It appears much more difficult to maintain it at the secondary school

level, where even biology frequently becomes separated into more specialised compartments. One of the necessary features of that united approach must be to overcome the existing discrepancy between science and technology, between naturalists and engineers. Not only technology with its modern concerns, but also biology especially from the ecological angle, discovering the life cycles and chain of events and changes within the ecosystems, is a real adventure of discovery. Both of them have today their important role in design and management of the natural environment and the top goal of a harmonic, well-balanced, and wisely used landscape.

Besides new textbooks which fully respect and include principles of environmental education, there is an urgent need for all kinds of other audio-visual teaching aids. Formal teaching in school has to be completed and supported by conducting simple experiments, field excursions and observations and other forms of semi-out-of-school and out-of-school educational activities (such as competitions, camps, expeditions etc.).

The key personalities in environmental education at this level are the teachers. Therefore the environmental education with a special view to its methodology has to be included in teacher training programmes as an obligatory course, a general one for primary school teachers and secondary school teachers in non-science subjects and an advanced one for secondary school teachers in biology and earth science. The course should also contain field observations, studies and practical conservation training. Weekend and summer sessions, workshops, special lectures and courses, excursions, field

studies etc., in environmental education for teachers should be organised within their post-graduate training.

High School and University Teaching and Training

There are many special technical high schools training engineering specialists of middle-rank qualification, such as agriculturalists, foresters, builders, geologists etc. The training programme is split into specialised subjects (courses) which hardly give them a correct approach to the environment, in order to take environmental problems and interactions into consideration. Therefore, sociology has to be introduced as an obligatory subject in most schools of that type and level or at least given the utmost possible attention and care within other appropriate subjects.

During recent years environmental education has developed in some countries through the introduction of new courses, post-graduate study programmes, diploma and degrees in environmental science, integrating ecological thinking into other courses through lectures, seminars and excursions, establishing special university chairs and institutes. This development should be encouraged while emphasising the inter-disciplinary character of environmental education. There is still a strong need for suitable teaching and training techniques, textbooks and audio-visual aids. Universities dealing with social sciences and publicity relations (adult education, out-of-school education, leisure-time use, journalism etc.) should develop research projects on methodology of environmental education among the general public.

Out-of-School Education of Youth

In the dialogue between youth and adults, there are more and more questions emerging, of bad approach of the past and present generation towards the environment (heavy criticism of pollution and deterioration of all kind, protest-songs concerning this subject etc.). Young people request immediate action, are ready to serve it and in many cases are developing their own initiative. This should be encouraged and interest among broader masses of youngsters stimulated through:

- (a) Support to already existing youth clubs and societies specialised in environmental studies and activities (national and local young nature-friends, naturalists, scientists, biologists, farmers, hikers etc., organisations) through funds and advice and establishing new ones of that pattern.
- (b) Introducing environmental studies and activities in a proper way into the programmes of other youth organisations, such as boy-scouts, girl-guides, young tourists, hikers, mountain-climbers, students, working youth, countryside inhabitants, Red-Cross, etc.
- (c) Giving proper publicity to environmental problems in youth journals, magazines and all other kinds of literature, broadcast and TV programmes, using the suitable mass media as organisers of these activities.

It is not difficult to awaken interest in environmental problems among the young generation. It seems to be much more difficult to keep the interest developing by providing funds and tasks for real activities. Young people ask to

be involved in concrete action which while improving their knowledge at the same time makes them useful to society. They themselves wish even at their age to be able to take over their share in the general responsibility for human environment and not to be only instructed in a— what to them it seems to be—rather abstract and theoretical way on the environment. This can be reached through organising studies, excursions, expeditions, camps, workshops and training seminars, work-camps like ‘conservation corps’, assistance at afforestation, landscape management and use, public-relations campaigns, etc., not only on local and national, but also international levels, because of the attractiveness of international exchange and travelling possibilities for young people. The environmental studies and activities must become a real adventure to young people.

This out-of-school education of youth is of great importance for the future and even present situation of our environment. Its profit can be expressed in three main points:

- (a) General education, i.e. erecting of a correct attitude of the future generation towards environment;
- (b) Search for and training of future specialists in environmental studies and management of environment;
- (c) Immediate efforts in improvement of environment (working camps, conservation corps, youth research projects, information campaigns).

Furthermore, in this component of education we also find some very important general educational features. These will be especially:

- (a) interesting and advantageous use of leisure by young people;
- (b) education for self-conducted and devoted service of the general public;
- (c) education for international mutual understanding and for peace.

(Dr J. Gerovsky: International Youth Cooperation in Field of Nature Conservation. Paper presented at 'Vere in Naturschutzpark European Conservation Conference, Stuttgart, May, 1969).

The out-of-school environmental education of youth deserves a high degree of priority. It enables young people to act, it involves the enthusiastic young generation not infected by older people's scepticism, the generation which will have to use and manage the environment wisely, at the same time enjoying it thoroughly.

Out-of-School Education of Adults

Out-of-school environmental education of adults is being provided by voluntary organisations and foundations which in some countries seem to play quite an important role. They are organisations—

- (a) dealing with environmental studies and management as a whole;
- (b) concerned with some special component of environmental studies and management (fishery, forestry, game, management, nature study, protection and conservation, gathering, planting trees and shrubs etc.);
- (c) paying attention to environment within broader activities (tourists, hikers, technologists, writers, journalists etc., this

group including also some general bodies, such as trade-unions, youth associations and even political parties). All these educational activities and efforts are to be encouraged and developed.

A very broad and important field for environmental education has been opened by growing potential of working man's leisure time which quite a lot of people try to spend in Nature. The many sided problems of recreation are becoming very urgent and topical ones at the present time. It may be said that the modern member of the human society bored and tired both mentally and physically because of the negative influence of urban and industrial explosion is seeking through recreation his new partnership with Nature. This is quite a valuable coin, but as usually a two-sided one, one side being the newly awakened man's interest in and understanding for the natural environment, the other one however a negative impact of man through recreational activities in his natural environment, especially vast and even small protected territories, beautiful natural areas, mountains and sea-shores. Therefore, the environmental education has two main tasks and at the same time stages in this context:

- (a) to prevent the damage caused to environment by people through their unconscious bad behaviour in Nature during their recreation.
- (b) to strengthen their knowledge and understanding of the environment and its needs.

All this education must be carried out in attractive and interesting ways, presenting to, general public the adventure of discovering knowledge, not annoying it by forbidding and boring instructions.

Information

An accessible mass-media, cultural and lecturing centres and clubs of adults' out-of-school education have to be used in the continuous and sustained programme of dissemination of information, knowledge and understanding concerning environment. These efforts should be aimed at creating powerful public opinion on environmental problems which should be one of the most important means to influence all those who actually decide and act in the management of our environment.

The Need for International Cooperation

It has become quite clear that the problems of environment have to be solved not only on national but also on worldwide level, because the environment is a matter of the whole mankind and it does not know any frontiers. The environmental education is an international matter too, for this reason it must be coordinated internationally with much more intensive care than usually given to international cooperation in other fields of education and sciences.