

Programme and Secretariat for International Ecology, Stockholm, Sweden: 241 pp., illustr.
 TOLBA, M.K. (1984). Guest Editorial: A Harvest of Dust? *Environmental Conservation*, 11(1), pp. 1–2.

JOHN L. CLOUDSLEY-THOMPSON, *Professor & Head
 Department of Zoology
 Birkbeck College (University of London)
 Malet Street
 London WC1E 7HX
 England, UK.; Founder & Editor,
 Journal of Arid Environments.*

Conclusion

The proverbial curate's egg having now been investigated further, we are forced to conclude that any good parts of it are unfortunately limited, and that the main source of hope is rooted in environmental education—provided its edicts can be implemented by suitable action on a sufficiently wide front and adequate scale. Thence in large measure comes the thrust of our World Council For The Biosphere with its twin sister the International Society For Environmental Education, which were both widely featured in our last Autumn issue, and *see also* the following Guest Editorial.

N.P.

GUEST EDITORIAL

Some Overall Imperatives of the Environmental Education Movement

Introduction: The Troubled Background

Environmental problems exist in all countries of the world, and at every state of economic development and political ideology. Third World countries frequently experience ills associated with underdevelopment or poorly-planned development. Often such problems result from poor farming techniques leading to soil erosion and depletion, improper management of forest resources, poor living conditions with respect to health and nutrition, vulnerability to natural disasters, and the lack of educational programmes to help them to resolve these problems. Other of the less-developed countries have adopted inappropriate measures based upon short-term gains or ones that are not suited to the existing situations. These adverse strategies have often led to the rapid depletion of resources, increased pollution, and in some instances to a decline in the standard of living and to concomitant spreading of disease.

Many developed countries, too, are faced with severe environmental problems. Some of their more critical situations include major industrial pollution, overexploitation of resources, and a variety of social and physical ills that confront their metropolitan areas.

When development programmes are not planned adequately, they may result in the *deterioration of resources* (such as the reduction in quantity and quality of mineral resources) or of those of the land, forest, or aquatic sites; *biological pollution* by organisms that may cause disease in humans, domestic animals, of crops; *chemical contamination* resulting from effluents, pesticides, or other materials; and *physical pollution*, such as of noise, silting, thermal wastes, or visual blight.

Such environmental problems cannot be resolved by considering only technological means; consideration must also be given to their social and economic roots. We will be facing the same environmental problems in the future and also breeding new ones—until we identify adequately their causes and develop specific and comprehensive programmes to resolve them.

It is evident that there can be no hope of a workable solution to environmental problems unless education is suitably modified to enable people from all walks of life to comprehend the fundamental interaction between humans and their environment, problems in this interaction, and potential changes to avoid or at least reduce these problems.

Within the attitudes and actions of our human population and its organizations, lie the behavioural roots of such ills as pollution, wasted energy, and the destruction of the environment. There is a general lack as yet of any global ethic effectively encompassing the world environment—an ethic which espouses attitudes and behaviours on the part of individuals and societies, and which should be consonant with humanity's place and critical role in The Biosphere.

In order to move towards a global ethic, I would like to outline a few environmental education imperatives for due consideration. These *imperatives* are representative of the thinking of many environmental educators in different regions of the world and have been expressed through thoughtful papers, meaningful discussions, meetings, proceedings of conferences, and publications. The ones that follow are not meant to be all-inclusive, but representative of *some* important thoughts which could be modified and expanded upon—to serve as guidelines for an action plan to improve the overall quality of our human environment.

Some Environmental Education Imperatives

1. Environmental Education should design programmes to reach effectively three major audiences, involving: (a) the world's general public, from early childhood through adulthood and beyond, in both the formal and the non-formal education sectors; (b) proper environmental education of specific professionals and social groups whose actions have an influence on the environment (engineers, architects, economists, planners, policymakers, manual workers, industrialists, etc.); and (c) the training of scientists, technologists, and other professionals who deal directly with environmental problems (agriculturists, horticulturists, foresters, biologists, hydrologists, ecologists, and yet others).

2. Environmental Education should constitute a comprehensive and continuous, life-long educational process, and one that is always responsive to changes in a rapidly-changing world. It should prepare the individual for life through an understanding of the major issues of the contemporary world, and the acquisition of skills and attitudes that are needed to play a productive role towards improving life and protecting Man's and Nature's environment with due regard given to ethical values.

3. Environmental Education should forge ever-closer links between educational processes and real life, building activities around the environmental issues that are faced by particular communities and nations, and focusing analysis on those issues by means of an interdisciplinary, comprehensive approach as a basis for proper understanding of the environmental issues.

4. Environmental Education should show quite clearly the ecological, economic, political, social, and educational, interdependence of the modern world, in which decisions and actions by the different countries can have international repercussions. Environmental education should, in this regard, help to develop a sense of responsibility and solidarity among nations and regions—as a foundation for a new international order which will guarantee due conservation and improvement of Man's and Nature's environment.

5. Environmental Education should be an integral part of every nation's educational process. It should be centred on practical environmental issues and be of an interdisciplinary character, aiming at building up a sense of values in people, contributing to the public well-being, and concerning itself with the survival of the human species. Its focus should reside mainly in the enlightened initiative of the teachers and the receptiveness of the learners, whose involvement and action should be guided by both immediate and future concern on the local, national, and ultimately global, levels.

6. Environmental Education should recognize that public involvement and participation in planning and decision-making are valuable means of testing and integrating economic, social, and ecological, objectives. Furthermore, public participation heightens consciousness-raising, fosters critical reflection on information collected and reviewed, facilitates group-processing and conflict resolution, and promotes empowerment of participants for committed actions by people (through collective planning and action) to exercise improved control over their decisions, resources, and institutions that affect their lives.

7. Environmental Education should make effective use of the mass media—radio, television, and the press—both inside and outside the school system, involving the stimulation and production of appropriate programmes, the training of mass-media personnel in environmental matters, and the coordination of the ministries and other agencies and institutions involved, both governmental and nongovernmental.

8. Environmental Education should work towards the effective development and interlinking of centres to help to promote pertinent research, programmes, and policies. These centres should work effectively with existing public and private institutions and with all facilities available to society for the education of the population—including the formal education system, different forms of non-formal education, and the mass media.

9. Environmental Education should consider the following *guiding principles* adopted by North American Association for Environmental Education (NAEE) in 1983:

- a) Concern itself with the environment in its totality—natural and built—including all biological and physical phenomena and their interaction with one another and with social, economic, political, technological, cultural, historical, moral, and aesthetic, aspects;
- b) Integrate knowledge of disciplines across the natural sciences, social studies, and humanities;
- c) Examine the scope and complexity of environmental problems, and thus the need to develop critical thinking and problem-solving skills and ability to synthesize data from many fields;
- d) Develop awareness and understanding of global problems, issues, and interdependence—helping people to think globally when acting locally;
- e) Consider both short- and long-term futures in matters of local, national, regional, and international, importance;
- f) Relate environmental knowledge, problem-solving, values, and sensitivity, at every level;
- g) Emphasize the role of values, morality, and ethics, in shaping attitudes and actions affecting the environment;
- h) Stress the need for active citizen participation in solving environmental problems and forestalling new ones;
- i) Enable learners to play a role in planning their learning experiences and providing an opportunity for making decisions and accepting their consequences; and
- j) Be a life-long process—beginning at a pre-school level, continuing through formal elementary, secondary, and post-secondary, levels, and utilizing non-formal modes for all ages and educational levels.

10. Environmental Education should strive to integrate the above imperatives into international and national policies and plans for the development of education of the general public, of appropriate social and professional groups, and of specialists in environmental fields, while promoting pertinent educational reform and concomitant innovation throughout the world.

WILLIAM B. STAPP, *Professor of Environmental Education*
School of Natural Resources
University of Michigan
Ann Arbor
Michigan 48104, USA;
formerly Chief of Environmental Education,
UNESCO, Paris, France, and President of NAEE.