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Introduction

Environmental education and environmental management are two expressions commonly used today for different purposes. The former is used to describe a process of understanding and clarification of the value of the environment and the relevance of environmental resources, with a view to encouraging people to use such resources in a more sustainable way. The latter, on the other hand, refers to a growing field of knowledge, characterized by the identification of processes, tools and instruments through which environmental resources may be used in a more balanced way or, in other words, how such resources may be managed.

Phenomenologically, environmental education techniques, programmes and strategies may be used as "instruments" through which the ultimate goal of the sound management of environmental resources may be achieved. There is a spread awareness in relation to the fact that environmental education may be incorporated as an effective part of environmental management programmes and, on an international scale, there are various examples showing a growth in such a trend.

Some of the common features of environmental education and environmental management are their interdisciplinary nature and their capability of dealing with a varied set of environmental matters, as well as the fact that they are flexible and their principles are feasible of implementation in a wide range of contexts.

The debate on the possibilities of integrating environmental education and environmental management is not new. For example, the "Tbilisi Conference Declaration"[1], prepared by representatives of 66 UNESCO member states, which drew up the guidelines for the establishment of environmental education policies in developed and developing nations, already provided some indication of the potential for integration of environmental education and environmental management. The conference endorsed the following goals of environmental education:

- foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;
- provide every person with opportunities to acquire values, attitudes, commitment and skills needed to protect and improve the environment;
- create new patterns of behaviour of individuals, groups and society as a whole towards the environment.

The above recommendations are sufficiently comprehensive to permit the development of environmental education strategies at international, national, regional and local levels and in support of environmental management programmes.

Integrating environmental education and environmental management

Even though various examples could be given, perhaps one of the most illustrative examples of the integration of environmental education and environmental management is the ongoing "European Master’s Programme on Environmental Management" (EMPEM)[2]. The scheme, created in 1992 and financially supported by the Commission of the European Communities, aims at providing a holistic training of personnel concerned with environmental management, by including "environmental education and communication" as modular components of the course.

The initiative of the EMPEM, one of the pioneer schemes in Europe in this field, has been followed by various other European universities to the point that many institutions offering postgraduate diplomas or Master’s degrees on environmental management now include environmental education components (e.g. as modules, series of classes or options).

In fact, the speed with which such an area is developing indicates that, within five years, those institutions which do not offer environmental education as part of Master’s degrees on environmental management will be an exception, rather than the rule as it is presently the case.

According to the European Association for Environmental Management Education
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(EAEMA), an organization which runs and congregates graduates of the EMPEM, environmental education has moved away from being an area of limited interest to some students, to a field in which over half of the students have an interest. The reason for this is clear: the effectiveness of the procedures for fostering environmental management, especially in those areas where public opinion is important, may be significantly enhanced by means of awareness-raising techniques, in a process where environmental education has a key role to play.

Among some of the goals that need to be commonly pursued, the following may be mentioned:

• the need to develop environmental education and environmental management at the international, regional, national and local levels, ensuring that local environmental issues are given as much attention and emphasis as national and international environmental matters;
• the need for research aimed at promoting environmental education and ways of efficiently disseminating awareness of the need for sound environmental management;
• the need for the systematic development of environmental education and environmental management programmes;
• the need to train personnel in both environmental education and environmental management, especially personnel who are able to use environmental education as a tool for environmental management.

The way ahead

Owing to the specific characteristics of each subject, the integration of environmental education and environmental management initiatives depends basically on the answer to some questions such as:

• Which specific common features should education concerning the environment and education concerning the management of the environment have?
• How can one introduce environmental education integrated with environmental management into the pool of current teaching practices?
• At which stage of the educational process as a whole and in higher degree courses (e.g. MSc courses) in particular, should environmental education be integrated with environmental management?
• Which are the strategies (and materials) most adequate for joint action, in formal teaching, in this field?

As in other fields, such as health[3] or biodiversity[4], various authors have dedicated a great deal of effort to try to provide answers for such questions which represent a point of concern for both individuals and institutions involved with environmental education and management. The answer to them, however, may represent the first step towards addressing an interesting challenge, where a lot can be gained and through which much may be achieved, especially with regard to fostering public participation in environmental initiatives[5-7].

From a practical perspective, environmental education is also suitable for integration with a wide range of conservation programmes. Bakshi and Naveh[8], for example, have listed various methods of environmental education, demonstrating how they may be applied in the context of formal teaching. Mackillop[9] described how environmental issues could be approached in an interesting way, and Martin[10] has put together different insights on how environmental education may be applied to a set of diverse circumstances. These authors illustrate how environmental education strategies combine knowledge related to environmental issues with educational approaches that enable their understanding, both inside and outside formal teaching.

In operational terms, the integration of environmental education principles and practices in environmental management programmes may involve three main steps:

1. Definition of the environmental problem(s) already present which may be solved by the implementation of a certain environmental conservation initiative;
2. Identification and selection of suitable measures through which the problem or its consequences may be reversed;
3. Selection and adoption of an environmental education strategy aimed at showing to the public involved the steps that each person might take in order to cope with the new situation, minimizing therefore the inconvenience that might result from a project or other environmentally-related initiative to be implemented.

Following the third item, the selection of a suitable approach and the possible preparation of information materials represent important procedures which, when combined, increase the chances of success of certain environmental management initiatives.

Conclusions

The integration of environmental education and environmental management is a useful
development when the benefits of such a procedure are considered, taking into account that such an integration may easily be achieved. If properly designed, integration programmes may be able to capitalize on the potential of environmental education and environmental management and on their ability to foster effectively a sounder use of environmental resources.

References
2 European Master’s Programme on Environmental Management (EMPEM), EMPEM Course Brochure, European Association for Environmental Management Education, Varese, 1992.