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## SUSTAINABLE DEVELOPMENT, ECOLOGICAL AWARENESS AND GEOGRAPHICAL EDUCATION

*Abstract:* Sustainable development requires the authorities of various levels to undertake difficult and unpopular decisions. The success of environmental policy is dependent on the degree of social acceptance of such decisions, which in turn is conditioned by the level of awareness and of the knowledge of environmental issues. An essential element then is the geographical education of both children and adults carried out e.g. by the distance education.

*Key words:* sustainable development, education, geography, Internet, mass media

### Introduction

Sustainable development (or eco-development) is a new, intricate challenge for present-day societies. For the natural environment resources to be used in accordance with the principles of its natural functioning and for the ecosystems to be managed in such a way as not to damage their balance, it is necessary first of all:

- to adopt ecological asceticism i.e. to manage thriftily and rationally the natural resources in accordance with the “ecological conscience”;
- to change the present economic and political priorities,
- to gradually introduce the concept of sustainable development into the sphere of science, economics, economy and the thinking and activities of every man (Kozłowski 1994).

This means that people should generally accept the assumptions of eco-ethics, which tries to determine the moral status of man with regard to nature in its various forms of existence. Eco-ethics formulates standards designating the character of human behaviour in relation to the remaining living beings, and it justifies their actual moral status. It also establishes what is good and what is wrong in the behaviour of people relative to the environment. Sustainable development is only one of the ele-

ments of eco-philosophical outlook on life, on which eco-ethical views are based. Other elements are;

- eco-centrism (i.e. that other beings and the whole eco-systems possess internal values);
- treating nature as a mother (inclination on co-operation and symbiosis);
- holistic cosmology;
- subordination of technology to moral culture;
- policy of decentralization;
- balance of sexes;
- strong sense of transcendence in the intellectual sphere (Fiut 1999).

Eco-ethics is an important and fundamental element of *ecological awareness*, i.e. the whole of recognized ideas, values and opinions on the natural environment as a space for life and human development, common for determined groups in a given historical period. Ecological awareness is composed of the knowledge and motivation for an adequate attitude leading to the creation of responsibility, which results from the knowledge of relationships and ecological laws (Poskrobko, after Kocik 2000). The so-defined term “ecological awareness” is by no means another slogan trying to give a catchy name to the issues having little in common with ecology as a discipline of biology; on the contrary, it approaches human ecology.

The present paper is devoted to the role of modern geographical education in shaping the necessary knowledge to build ecological awareness.

## Polish ecological awareness and the assumptions of sustainable development

According to Kocik (2000), the majority of Polish society still gradually continues to realize threats to the environment, although there is no awareness of all relationships among particular elements of that environment. However, strong diversification is observed; there are élites of science, politics and social ecological movements who possess relatively high awareness of environmental hazards and who, with ever increasing determination, undertake various actions in favour of transformation of the reality in accordance with the requirements of ecology. According to Kozłowski (1994) the requirements of sustainable development in Poland should be implemented through:

- the development of agricultural production;
- development of industry in cooperation with research institutes;
- elimination of factories arduous to the environment,
- reduction of atmospheric emissions of CO<sub>2</sub>, CO, SO<sub>2</sub> and NO<sub>x</sub>,
- decreasing the dependency on non-renewable power resources.

These aims are difficult to accept by most of the adult part of society for a few reasons. The postulate for the development of farming production is motivated by favourable natural conditions of the country, but its implementation as an element of sustainable development meets an impediment in the form of insufficiently developed ecological conscience of farmers. Their knowledge of environmen-

tal problems is generally accidental, incomplete and superficial. Even worse is the situation in the sphere of real behaviour, often linked with anachronical patterns and technocratic habits (Kocik 2000). The implementation of the above mentioned assumptions of sustainable development requires the revision of attitudes learned in the period of real socialism. The fifteen years of transformations have brought about the pauperization of the majority of society and have evoked an atmosphere of nostalgia after the times of full employment and of guaranteed social security as well as of the priority of quantity over quality. That common nostalgia involves the expectation of actions from the government, which in the short run would improve the material position of many people. Meanwhile the development of science-based industry is an expensive, long-term investment requiring highly qualified work force, hence it lacks wider social acceptance, which in consequence is expressed by low outlays on science from the state budget. Besides, the still observed expectation that the state "would do something" continues to be more general than one's own initiative which is, too, the mental legacy of society from the period of centrally planned economy.

The elimination of factories arduous to the environment often means the deprivation of many families of the only source of income without a chance for alternative employment. Reduction of the atmospheric pollutants emission can be achieved, among other things, by the lower energy use, but calling for the limitation of consumption in a country where many families hardly achieve even an average standard of living, must evoke social resistance. It has been proved that with a national income by \$ 1,000 per head there is no social interest in the problems of environmental protection. The chance for raising ecological awareness of society does appear when the index reaches the value of \$ 2-3 thousand per head (Kocik 2000). In Poland its value is at some \$ 5,000 (Vademecum 2004) but the problem is a considerable economic stratification of society. The diversification of the sources of energy in Poland meets the resistance of coal-power lobby, the power and influence of which is the consequence of the fact that more than 90% of energy in this country is obtained from fossil fuels.

Summarizing, it is possible to state that the state of ecological awareness of Polish society, as seen in the light of needs of sustainable development, is insufficient. The cause may be sought, among other things, in the material hardships of most of society and in the mentality inherited after the period of real socialism. Geographical education can add to a change of attitudes to the environment and to a deepening of knowledge about the functioning of the world around us, but without a significant improvement of the material status of Polish society it would be difficult to effectively raise ecological awareness.

## **Education, mass media and ecological awareness**

In Poland education is understood first of all as the instruction of the children and youth in the school system. Education of the adults is frequently associated solely with professional training. Meanwhile, the rate of changes in the present-day world requires also from the adults to continuously update the knowledge once gained at school. This is especially important in the case of environmental problems. These

are issues fairly recently brought into the teaching programmes, which means that the dominating majority of grown-up society did not make their acquaintance with them while at school. Where do they draw their information on the matter from? Unfortunately, chiefly from mass media. Meanwhile e.g. in the case of issues relating to climate most of the Polish press gives information without a broader context, even with a commentary, which can add an untrue meaning to a true information (Bokwa 2003).

As is emphasized by Goban-Klas (1999) the impact of mass media depends on the recipients' level of education. The hypothesis of "difference of knowledge" proclaims that with an increase in information inflow by mass media into the social system, the layer of society with a higher social-economic status absorbs information at a faster rate and in a wider range than do the layers with a lower status, so the difference between these layers tends to increase rather than decrease. The hypothesis, however, has two different dimensions. The first one relates to a general level of education of society which cannot be changed by the media themselves because this is the task of the school system. The second one relates to particular matters and problems, which can be subjected to increasing or decreasing information differences. In the light of the results by Bokwa (2003) cited earlier it is expected that the information on environmental problems supplied by Polish media, to the recipients without fundamental information on the subject, can not only have little effect on the shaping of knowledge of ecological awareness but can even deepen the lack of interest in these problems. Goban-Klas (1999) pays also attention to the fact that mass media affect considerably not so much what people do think but rather what people do think about (hypothesis of "daily order"). The recipients obtain from the media not only current information on domestic and foreign events but also gain conviction about the importance and value of particular problems. Mass media can therefore change the cognitive structure of the recipient, which is decisive for the formation of their attitudes and behaviour patterns. In Poland as well as elsewhere the medial message is dominated by political, economic and criminal reports while environmental problems are nearly exclusively touched upon when extreme events take place. Recipients without even a fundamental knowledge about the functioning of the environment would not be able to place this information in a broader context, which makes it impossible to use it in building ecological awareness. Besides, in a country with a high level of unemployment (some 20%) and with other economic and political problems, it is hardly possible to count on a considerable interest in environmental problems in the media; this matter always appears to be of too little interest.

Mass media can, however, be used in education in a twofold manner; as a source of information and as a didactical tool. It follows from the above considerations that mass media as a source of information require from their recipients some criticism and an earlier meritorious preparation. Instead, mass media as a didactical tool are used in distance education (Żygulski et al. 2000), as are in school practice, mainly to facilitate the understanding of chosen issues by means of advanced illustration material. For geographical education to be effective in raising ecological awareness of Polish society it should take mass media into consideration, to a larger extent than it does now, both as a source of information and as a didactical tool. It is worth

to notice that the press, radio, film and television put us exclusively in the role of a recipient while the Internet creates possibilities of a broadly-understood interaction and of independent creating and rendering accessible materials. This is therefore an exceptionally demanding mass medium for the recipient, but at the same time an extremely versatile didactical tool.

## Geographical education and sustainable development

An important role of education in implementing sustainable development has been emphasized since the moment of the appearance of that notion at the UN conference at Stockholm in 1972. It follows from numerous international settlements that the so-called environmental education is to make people aware of the interrelationships of economy, politics and ecology in the modern world so as to strengthen the sense of responsibility and solidarity among the nations. Essential, too, is the shaping of attitudes and convictions as well as of skills needed in environmental protection. Such education should cover not only the physical and biological environment but also issues of the socio-economic environment and human development (*Rozwój...* 1996). As is emphasized by Grodzińska-Jurczak (2001) the environmental education is a relatively young discipline of science. This is a notion somewhat narrower than nature education since it concentrates chiefly on ecology meant as a section of biology. The form and the way of implementing the purposes and contents of the mentioned kinds of education continue to be the subject of numerous discussions. It is, however, beyond any doubt that it is necessary to further educate teachers, to work out new educational materials and to employ interactive methods of information transmission. Besides, it is important to be in direct contact with nature. The broadly-understood nature education (with a share of geography, biology, ecology as well as chemistry and physics) wrestles nowadays with the same problem as do natural sciences, i.e. the excessive fragmentation and specialization, with a sort of atomization. This is the unavoidable effect of a dynamic development of research and of the avalanche increase of information. In the meantime, more than ever before, there is a need for a holistic and complex look at the world around us. Geography was used to present such an approach, but environmental changes now taking place require a co-ordination of efforts of geographers, biologists, chemists and physicists and even of representatives of such seemingly distant disciplines as information technology. It is only such a co-operation resulting in complex, mutually complementary teaching programmes or joint projects that creates a chance for an effective nature education.

An effective education in favour of sustainable development should be based on the so-called searching instruction methods, which stimulate activity of the learners. These are:

- discussion – exchange of views, valuation of the phenomena discussed, an attempt at finding a joint position,
- observation and measurement – field activities, direct contact with the environment,

- problem methods (brain storm, didactical play, situational play, staging methods, case studies (*Rozwój...* 1996).

In the light of these assumptions the role of geography in nature education seems to be essential, since this is an interdisciplinary science, based on both indoor methods and on outdoor ones. The project ESPERE-ENC is an example of a practical implementation of the above assumptions by employing the Internet – the youngest mass medium.

## Project ESPERE-ENC and geographical and nature education

Over 2003-2004 the Institute of Geography and Spatial Management of the Jagellonian University participated in the project ESPERE-ENC ([www.espere.net](http://www.espere.net)) based on the co-operation of research and pedagogical institutes from seven European countries within the 5<sup>th</sup> Framework Programme of the European Commission. The chief aim of the project was the creation of an internet climatological encyclopaedia in seven languages and entering co-operation with its potential users. The encyclopaedia is an interdisciplinary and interactive scientific tool (Bokwa et al. 2003, *Encyklopedia ...* 2004). Assumptions of the project, as well as the encyclopaedia itself are closely associated with nature education (in that geographical) and its contribution in sustainable development:

- climatic issues are presented from the point of view of geography, physics, chemistry, biology and oceanography, which facilitates the understanding of interrelationships among particular elements of the natural environment and of the socio-economic system (Bokwa et al. 2004);
- exercise sheets accompanying encyclopaedia texts make it possible to apply the so-called searching instruction methods (discussed in the previous chapter) and activation of the students;
- the encyclopaedia is to be found on the Internet, owing to which it is potentially accessible to everyone in the world (Internet as a mass medium), which makes it possible to significantly enhance the group of recipients and the opportunities to shape ecological awareness;
- the employment on Internet pages of the encyclopaedia of computer animations, films, photos and colour schemes explaining the discussed issues makes it an extremely useful didactical tool;
- workshops for teachers and competitions for students, organized in the framework of the ESPERE-ENC, made it possible on the one side to pay greater attention of the students to environmental problems, and on the other to help both the students as well as the teachers in raising medial competences; they pointed to the resources of the Internet, which are recommendable in nature education and liberated students' activity in an independent creation of educational materials.

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## Zrównoważony rozwój a świadomość ekologiczna i edukacja geograficzna

### Streszczenie

Zrównoważony rozwój wymaga powszechnego przyjęcia założeń ekoetyki, która jest podstawowym elementem świadomości ekologicznej, niezbędnej do akceptacji działań gospodarczych i politycznych na rzecz ekorozwoju. Świadomość ekologiczna większości polskiego społeczeństwa jest niewystarczająca, a przyczyn tego stanu rzeczy można się doszukiwać w trudnej sytuacji materialnej wielu rodzin i mentalności odziedziczonej po okresie realnego socjalizmu. Edukacja przyrodnicza powinna obejmować nie tylko młodzież szkolną, ale także wielu dorosłych, którzy informacje o problemach środowiskowych czerpią jedynie z mass mediów. Geografia odgrywa istotną rolę

w edukacji przyrodniczej dzięki całościowemu i kompleksowemu spojrzeniu na świat wokół nas. Encyklopedia klimatologiczna, powstała w ramach projektu ESPERE-ENC, jest nowoczesnym środkiem dydaktycznym, wykorzystującym różnorodne możliwości Internetu.

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