

SUSTAINABLE DEVELOPMENT AND ITS OCCURRENCE IN SUSTAINABILITY PEDAGOGY

© Anna MEGYERINÉ RUNYÓ
(Apor Vilmos Catholic College, Vác, Hungary)

megyerine@avkf.hu

In the first part of the present work the different interpretations of the term sustainable development is analysed. It can be stated that the meaning of the term was changed and modified through the years and by today there are interpretations of the term at different levels. The next chapter discusses the occurrence and role of the term in public education. Then educational efforts observed in the pedagogy of sustainability are presented. The last part analyses the interpretation of the term environmental consciousness and its predomination at different levels, emphasizing the level of the individual that has greatest role in education.

Keywords: sustainable development, pedagogy of sustainability, environmental education, environmental consciousness

Interpreting the term of sustainable development

Nowadays many publications focus on sustainability and sustainable development. However, almost as many interpretations of the term exist: its meaning is expressed at different levels and ways.

Since the report composed by the Brundtland Committee (Brundtland, 1987; Közös jövőnk, 1988) its meaning has been extended gradually through the years. In order to stay accurate it has to be mentioned that the term sustainable development entered professional literature with the publication of the book of Brown L.R. entitled "Sustainable society" in 1981. Its centre issue, still relevant today, was that environmental problems can be solved only together with economic and social issues (Kerényi, 2006b; Láng, 2003).

At that time, the content of the term sustainable development held a political message. It was a call for attention for the nations of the World to act and to define problems as integrating environmental policy into the political and economic life of the World.

Since then, the term has been interpreted at several levels and perspectives. It was defined more precisely from scientific point of view addressing the complexity of the term calling attention to the multiple ways of interpreting it (Erdősi, 2000; Gyulai, 2002; Kerényi 2002, 2006b; Náray-Szabó, 2003; Wackernagel, 2001).

Let's see the individual meanings of the words. In its report entitled "Our common future" the Brundtland Committee states that the countries of the Third World have the right to develop and as a consequence, to produce in larger-and-larger quantity due to the great inequality of the society as this is the way out of poverty. In this way, the report applies development as a synonym to growth (Kerényi, 2002).

Uncertainty in the meaning of the two terms is suggested by Wackernagel and Rees (2001) as well when they state that many people make no difference between pure growth and development.

However, when interpreting the term time factor has to be considered as well. The term "future generations" suggests no limitations in time. It is relevant to any future generation (Kerényi, 2006b).

According to Szilávik J. (2007) realization of sustainable development is only possible if tasks of sustainability are given to every level and every time period. Tasks and effects affect the complex system of nature-economy-society. It also has to be considered that the environmental policy of a country has to be adjusted to the national, mega-regional and global environmental politics as well.

Therefore there are major tasks at global, megaregional, European Union and national, local, small regional levels as well (Szilávik, 2007).

Different contents are associated to the different levels of the term. At social level for example Meadows D.H. et al. (1972) call the society sustainable "when it is capable to exist through generations, it is farseeing, flexible and wise enough not to undercut its own physical or social living system" (Szilávik, 2007).

The term is considered differently in the economic sector: here different branches are determined by their associated tasks. Therefore, for example the most important principles of the Hungarian agriculture regarding sustainability are:

- -to be environment friendly
- -to save resources
- -to produce healthy food and forage
- -to help protecting biodiversity
- -to give interest for farmers in production
- -to contribute to the development of rural areas improving their population retaining capacity.

Tasks in industry

Quality factors of development have to be changed: those industrial branches have to be inspired that are more effective regarding utilizing resources, less polluting, produce less waste, utilize renewable energy in greater rate, less harmful to human health and environment, production is "cleaner" regarding both transporters and consumers.

Regarding regional development. Aim: improving social, economic, environmental quality of settlements; establishing the living conditions of those living in poverty; -providing appropriate flats for everybody.

Establishing integrated environment protectional structure: water, channel, hygiene, solid waste management; energy and development of traffic; developing land-use so that it fulfils the requirements of sustainability.

Traffic: emphasizing mass transport, its development within cities and in rural areas as well; -urging the construction of bicycle and pedestrian routes; effective traffic control, maintenance.

Tourism. Putting ecotourism forward, supporting it and operating tourism in an environment friendlier way (Láng, 2003). In conclusion, it is clear how hard it is to determine the meaning of the term in its essence and covering every aspect. Maybe the best definition of the essence of sustainable development is given by Kerényi (2006a):

"Man has to produce and consume and to develop his society in a way that the structure and operation of the living Earth system is not changed significantly, to provide living conditions for the entire biosphere together with fulfilling the basic human needs apart from the conditions of existence in a long term (thousand years)"

He also adds:

"Term of development involves not only the difficulty and complexity of structures but improved provision of the members of the society (enough good quality products, high standard services) and healthier life conditions as well. Social development is primarily not a question of quantity but quality. In the course of sustainable development, significantly better life conditions than today have to be provided for the members of the society, while in the meantime, the natural potential of our Earth has to be retained (biological diversity, clear air, water, soil, enough mineral resources for mankind as a whole)."

This definition is the "hard" (closer sense) interpretation of the term and it can be stated that we are far away from meeting these conditions today.

According to the definition, in the course of sustainable development economic and social development has to be harmonized by the interests of the environment. However, environment pollution and hazards are found everywhere with the development of the economy. In the course of social development, contrasts are intensifying, the gap between the poor and the rich is growing. This applies not only to Hungary but to the entire World as well. The goal set at the World Meeting in 2002 of helping the development of poorer countries has been realized only in a small rate. The aim seems to be far away if observed via the "hard" interpretation.

There are many who consider this interpretation as inappropriate. According to the "soft" interpretation, sustainable development can be achieved if natural loss /that is a loss of values but the supporters of the "soft" interpretation call it a loss of capital/ is substituted by capital of the same quantity/value produced by man. Based on their views, every natural value can be compensated by values of artificially produced products (Kerényi, 2002). If everyone takes this sense of sustainable development, then natural values will be eliminated rapidly, that may lead to the collapse of the entire ecological system. Nevertheless, subsistence of the entire mankind depends on that whether we are able to substitute the operation of the natural ecological systems eliminated or modified by man or not. Living creatures that can adapt to altered conditions only slowly via evolution will not be able to remain - or at least they will be less-and-less able to exist in the long term - in the urban and agricultural ecosystems developed by man. It makes thus more sense if we try to meet the conditions of the "hard" interpretation.

For this, however, numerous measures and, what is more important, their harmonized operation are required. This can be realized only if environmental protection institute networks can operate more effectively at both national and international levels. This, however, requires the establishment of a deeper relationship system among the base pillars of sustainable development.

Let us outline the base pillars of sustainable development:

- economic activities
- social measures
- environmental protection

Effective institution network is associated to the three base pillars very closely. Although it is true that sustainable development can be realized as the result of the complex relationship among the factors of society, economy and environment, the presence of the political level is very important, the different fields of which influence not only the factors of sustainable development but are in a complex relationship to each other as well (Kerényi, 2006b).

Strategies already prepared or under preparation also help the realization of sustainable development. In the course of forming sustainable development strategies all three base pillars have to be considered: environment, economy and society. Apart from these, several strategies aim to establish and improve institution networks.

Special feature of strategies is that different countries consider the development of different factors more important (Kerényi & Csorba et al., 2003). The analysis reveals that less developed countries consider development of the economy more important than others.

In the case of more developed countries, interests of the society and the environment are focused - e.g. Great Britain, Republic of South Africa. It is interesting that there is a good balance in the importance of the base pillars in Slovakia. In the contrary Poland hardly mentions environment. In general, main scantiness of the strategies is that international relationships are not emphasized enough.

There is a great difference in the time perspective of the different strategies. In contrary to the 3-year limit for achieving the goals in Canada, the Netherlands established a program for 30 years. Similarly great differences can be found regarding control. While reports are prepared in each year in Great Britain with several indicators investigated whether goals set in the program are achieved, reports to be prepared by undefined dates can be read in several countries.

Hungary completed its National Sustainable Development Strategy rather late in 2007. Its advantage, however, is that it has included the positive elements and excluded the negative elements of the already prepared strategies. Thus a balance has been developed among the three base pillars within the strategy and special care has been taken in establishing institution networks and developing international relationships (National Sustainable Development Strategy, 2007)

Sustainable development strategies are very important because they enforce the political leaders and economic key-persons of nations to keep to, periodically re-examine and re-think principles of sustainable development.

Term of sustainable development in public education

The term has entered public education, and environmental education has also involved sustainability in more-and-more fields since the 1980s. It was so successful that the 57th general meeting of the United Nations on 20th December 2002 declared the time period between 2005-2015 the Decade of Education to Sustainability.

Following the decree of the Rió Conference in 1992, strategies aiming to improve environmental thinking were developed in many countries in the last decade. This was the case in Hungary as well. In 1998 the first print of the *National Environmental Education Strategy* was published (Vásárhelyi & Victor, 1998).

Its main credit was - among others - that it targeted not only public education but almost all fields of state administration, media, private life and

the society as well because they might contribute to permanent and well founded improvement of the state of the natural and human environment via changing the environmental consciousness.

The strategy emphasized the necessity of coherent application of the aspect system of sustainability. Thus the definition of Strategy is:

"Sustainable development requires the formation of such thinking from everyone in environmental education - from every member of the society - that can view the challenges in the World in a system and can give responses to the challenges that induce no further conflicts between man and nature. The most important message therefore is that the problems of economy, society and the environment form one sole system and that global crises cannot be solved with overemphasizing one of those problems."

It is clear that the Strategy already in 1998 considered the harmonization of man and nature as the target of environmental education and it referred to the importance of the unity of economy-society-nature. The second Strategy was prepared completely in the sense of sustainability in 2003 (Vásárhelyi & Victor, 2003).

Renewing of the Strategy was necessary because the proposals of the Strategy of 1998 were not concrete enough and did not considered the different possibilities of implementation. Last chapter of the Strategy of 2003 was created in order to realization.

Relationship between the pedagogy of sustainability and environmental education is clear. Practice of environmental education was extended by global and local environmental problems.

It is a challenge facing the individuals and communities dealing with the development of consciousness and education of the society to enable the necessary transformation that places mankind onto the route of sustainable development.

Providing sustainability is associated with observing reality and risks in the natural and social environment of man, with the culture and effectivity of handling conflicts and the skills required by decision making.

The 3rd version of Strategy, currently under preparation, in harmony to the decree of the UN tries to achieve that the principles, targets, methods of sustainability and associated values appear in every field of our life: in the school, office, at home and in different communities (Vitaforum..., 2009).

Educational targets in the pedagogy of sustainability

The following educational efforts are emphasized in the pedagogy of sustainability:

1. *Life-long learning*. Maybe the most important principle, according which compulsory education is not enough, continuous, life-long self training is essential.

2. *Interdisciplinary approach*. Sustainability connects physical sciences, social sciences and humanities as well. Educational plans and programs have to depict the relationships between physical and social sciences (subjects) regarding sustainable development.

3. *Developing system view and critical thinking*. Today educators accept generally that the primary goal of learning is the passing of attitudes and knowledge together with developing and forming of different skills (e.g. problem solving capability, conflict handling, information handling, communication and critical and creative thinking). In today's economic life, employers look for employees having these skills, as tasks and problems are complex, their solving requires effective preparedness and applicable

knowledge. Environmental features and problems are themselves system like, meaning that in order to define them the elements and connections of the system have to be identified and the idea that every system is the part of a greater system has to be recognised.

4. *Developing co-operations.* Relationship between educational institutes, local governments, companies of the production sector, civil organisations and community groups will become more-and-more important. The good pedagogy of sustainability involves the entrepreneurs and professionals of the settlement and the representatives of the local communities, as effectiveness of co-operation can be learnt only in this way. This all requires effective co-operation skills.

5. *Multicultural perspectives, different chances.* Multicultural approach of the pedagogy of sustainability may help the conservation of the cultural and linguistic tradition of different people and ethnic groups. Therefore pedagogy of sustainability has to adjust to the different cultural interests and goals of different social groups. Necessary differentiated training and skill development have to be supported with providing equal chances for children, youngsters and adults having different cultural traditions and social-economic background.

6. *Developing the competencies of educators.* New methodology, different from the traditional one is required in order to change and develop skills and attitudes successfully. We have to realize that a close relationship exists between the content and methods of educator training, further education and the effectiveness of the environment friendly education of students.

7. *Operating pedagogical information and service networks in order of sustainability.* The society has to become involved in solving local sustainability problems. For this, members need equipment for recording the state of the local environment, for analysing the data and for determining further measures.

8. *Planning the future image of settlements in order of the pedagogy of sustainability.* The task of the individual settlements is to inspire new economic possibilities. It is important to support sustainable production and renewable resources primarily. For this, long term plans are needed and decisions are required that determine the success of the economy of the settlement. Besides, these plans have to be made so that co-operation with local schools, civil organisations, representatives of the production and trade sector are emphasized, thus information obtaining opportunities within and outside schools are created that prepare people for the sustainable future.

9. *Role of individuals.* Individuals can contribute to the realization of sustainable development with that they give time - and if necessary money - for studying problems related to the environment and to natural values. The task of individuals is to extend their knowledge and skills and to change their attitudes and habits. Especially important are the consumer role and responsibility of individuals together with co-operational abilities.

10. *Civil organisations and education for sustainability.* Civil organisations may play a decisive role in the success of the pedagogy of sustainability. Civil scientific organisations give useful information on topics related to the environment and sustainability, prepare educational publications and tools. It can be stated that the pedagogy of sustainability receives a gradually growing role and this can be helped by realizing the above efforts (Vásárhelyi & Victor, 2003).

Terminological levels and diversity of interpreting the environmental consciousness

The novel of Rachel Carson entitled *Dumb spring* published in 1962 called attention first to the consequences of applying too much chemicals. This book established the term of environmental consciousness, a term which of course has changed much since then (Láng, 2003).

It was shown above how widespread is the interpretation of the term. It is used by many and its meaning is not the same frequently. The term of environmental consciousness can be interpreted similarly in many ways. Maybe it is best to divide its meaning into different interpretation levels. Let us see first its appearance in the literature and the development of its interpretation.

Environmental consciousness was first investigated by the environmental psychologists Maloney, M. P. and Ward, M. P. They were the first who stated that for some people the environment is not indifferent. They worry about the future of the environment and think that caring with the environment is important. They also pointed out that this is not general: although the majority of the people agree to environmental protection in their behaviour they have no environmental consciousness (Maloney & Ward, 1973).

They have also divided environmental consciousness into several components: they separated environmental knowledge, environmental feeling, aptitude to active measures and real activity. With this they determined the most important elements and steps of development of environmental consciousness.

Environmental consciousness is formed by the knowledge and moral conviction about the environment. Thus it unifies environmental knowledge and the approach with which the ecological, economic and social sustainability of our environment can be outlined (Kovács, 2008). Therefore it cannot be limited to knowledge, however, it is essential for the environmental consciousness.

The main goal of environmental consciousness is to establish the unity of and harmonize man and the environment. In general the environmental consciousness of the individual is meant under the term of environmental consciousness. Who is considered environmentally sensitive? That individual who considers the self sustaining demands of nature in the course of his/her different activities, regards environmental problems as important, makes efforts to get to know them and seeks for solution even if it requires energy or financial efforts as well from him/her. The individual makes efforts to perform them in the practice as well.

Maybe it can be stated that this interpretation level is the most important. However, this would not exist without the rest of the levels, therefore it is important to mention them. They include the global level, mega-regional/international level and the national level. There are scientists who go further and talk about institutional level as well (Dudás, 2008) but in following the logic these are the levels of major importance. Naturally, each level can be further divided. Let us see the most important levels:

The state has to have a major role in the environmentally sound behaviour of a country. The state keeps contact with the mega-regional and, through that, with the global level. In consequence, the state forms the environmental policy. It is essential that its activity is done effectively in integration to the international environmental policy. The state enables the work of the lower levels and their possible integration to the national and

international levels of environmental consciousness by creating appropriate laws, controls and measures.

Responsibility of local governments at small-regional and local level is great. Today, laws prescribe the responsibility and tasks of local governments in this aspect. They are essential in communicating towards the inhabitants. They contributed much to the development of sustainable towns and villages by determining the correct trends in regional development. Apart from these, they can influence the knowledge and habits of the population with the help of appropriate local government policy and incentives.

Third level is regarded to be the role of the representatives of the economic sector, the companies. More-and-more decrees and regulations mention the establishment of sustainable companies and the introduction of sustainability in practice at the level of companies.

Despite all these, appropriate knowledge of the members of the society is essential. Thus education emphasized in the previous chapters is very important. Our children have to obtain appropriate knowledge and have to have the sense of responsibility to future, together with the demand of taking real measures and, what is more important, they have to act actually.

The aim therefore is the active responsibility based on knowledge. Even at individual level. In this, institutional education can make major progress with bearing in mind that in order to achieve success, co-operation of all of the associated parties is inevitable.

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