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## Education for sustainable development as a guarantor of good health of modern man

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### Abstract

Human health is a timeless value, but not for a whole lifetime. It depends on many factors: genetic resources, lifestyles, but also the life environment. There are many ideas to improve the quality of health condition of people on Earth. One of the most interesting proposals is the foundation of sustainable human development, taking into account the natural environment impact on health. The text includes an attempt to portray the fact that educating people in the field of sustainable development act prospectively. We teach them how to care for natural environment, and through these activities to secure a better health condition.

**Key words:** environment, ecology, health, education, global, sustainable development, education for sustainable development

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### Introduction

Sustainable development is an activity that allows to maintain a balance between the needs of different people all over the world, and the environment in which they live. This development gives all people the opportunity to meet their basic needs without jeopardizing the future generations to run out of clean air and drinking water. It recognizes that everyone has the right to improve the quality of their lives, but it cannot be done at the expense of other people or the environment. Healthy and clean environment is a prerequisite for human health and life. Unfortunately, the reality concerning human existence is very different.

We live in a time of rapid development of science and technology in various fields of life. This rapid growth, often uncontrolled, in many cases subjected to the laws of ruthless exploitation and consumption has become undoubtedly

a force that threatens human existence. a major problem is to subordinate the needs and aspirations of the society to environment capabilities<sup>1</sup>.

Since the beginning of the planet Earth, man uses natural resources. The influence of human life and the environment depends on many factors. With modern technology, newer equipment, people are increasingly using the natural environment, leading to over-exploitation of natural resources, polluting the environment with various types of industrial waste, destroying vegetation, introducing a lot of harmful substances into the atmosphere, which leads not only to the impoverishment of the world of flora and fauna, but above all, it is a threat to mankind and its highest value – which is health. In the last decades of the twentieth century, the man began to notice the dangers arising from environmental damage and remedial action in this area. Man introduces a number of changes in the various sectors of the economy, implementing wide-ranging environmental education among children and adolescents, assumes new forms of conservation in order to preserve the environment in the least altered form of the immediate environment to eliminate the factors that threaten his health condition. It is not an easy task and it requires a systematic application of specific human strategy. a good way to achieve success in this area is to use the objectives of sustainable development concept.

### Natural environment and human health condition

Already in the 70s, thanks to the Canadian Minister of Health M. Lalonde, it was assumed that human health depends on four basic factors. This theory assumes that the impact of lifestyle on health hovers around 50%, genetic factors 20%, environmental and social factors 20%, and the health care system 10%. This division of the determinants of health were also adopted by National Health Program developers. In the literature on health education, there are many classifications of health risk factors and health protective factors. In all of them it can be seen clearly that environmental factors have a significant impact on human health.

The degree of pollution significantly affects the health of people and their quality of life. Everyone is at risk, especially residents of large cities, industrial centers. In this environment, the human body is exposed to many

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<sup>1</sup> B. Parka, I. Żeber-Dzikowska, *Edukacja dla zrównoważonego rozwoju – formy realizacji w świetle badań*, [in:] D. Cichy (ed.), *Edukacja środowiskowa wzmocnieniem dla zrównoważonego rozwoju*, Instytut Badań Edukacyjnych, Warszawa 2005, p. 196.

harmful factors which are present in relatively low concentrations in air, water, soil and food. Usually, their effect is a long-term, chronic, often goes unnoticed by the man. So it's a health hazard. Pollution of the environment is fraught with danger for human immunity. When this action is disturbed, e.g. by a polluted environment, damage to the defense mechanisms occurs – the tendency to disease is then increased. Cumulative toxic substances in the body taken from the water, food or respiration, act on various human organs and systems. Studies show that air pollution has a detrimental effect on the respiratory system, circulatory system, but also on the brain. People living in polluted cities more often tend to have inflammation of this organ than people from the cities with clean air. As a result of industrial activities, combustion, solvent vapors etc., atmosphere absorbs, among others: carbon monoxide, ozone, nitrogen, metals (including lead, copper, iron).

The health effects of environmental exposures are diverse and manifest themselves in the form of temporary or permanent functional disorders of various systems or, unfortunately, more often in the form of chronic diseases, called civilization diseases.

Age group most vulnerable to the harmful effects of toxins from the environment are children. This happens due to the physiological conditions and characteristic behavior, including frequent exposure to the “fresh air”. This kind of exposure of child's body may be revealed at a later age, in the form of variety of diseases.

Adults, according to data contained in the Report of the Institute of Health<sup>2</sup>, as a result of prolonged exposure to harmful environmental factors most often suffer from: digestive and endocrine systems diseases, respiratory and circulatory systems diseases, laryngological diseases and allergies.

In particular, cardiovascular diseases are widespread in society and are a major problem for the entire health care system. They are chronic and generally require a long, expensive treatment. It is not only medical but also social and economic problem, as they often cause long-term absence or total inability to work. Some of cardiovascular diseases, such as hypertension and coronary heart disease, are among the diseases indirectly related to the environment. Mechanisms that determine their relationship to the patient's place of work is the occurrence of occupational factors that increase the demand for oxygen and reduce the possibility of the use of oxygen by the heart.

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<sup>2</sup> *Zdrowie priorytetem politycznym państwa. Raport*, Instytut Ochrony Zdrowia, Warszawa 2013.

High probability of pathological changes occurrence also applies to psychosocial factors, like stress in the workplace and the environment factors like for example: the exposure to tobacco smoke or noise. Electromagnetic fields, high and low temperatures as the risks to human health are also considered.

The activities suggested in order to reduce the risk of cardiovascular diseases for environmental reasons are:

- Implementation of efforts in the fight against smoking,
- Reducing human exposure to emissions of carbon monoxide,
- Reduction of exposure to noise,
- Reduction of exposure to psychosocial factors,
- Health promotion programs focused on risk factors for cardiovascular diseases.

The simple rule is to assume that taking care of the environment we take care of your own health. Each of us can reduce the emission of pollutants into the environment by using at home and work the least harmful chemicals, municipal waste sorting and saving energy. As consumers, we can choose environmentally friendly products marked with special labels and certificates.

According to the World Health Organization, 30% of all diseases in the world are caused by the harmful effects of environmental factors.

The research<sup>3</sup> shows that almost 30% of Poles cannot determine the risks in the environment closest to their residence. 60% believe that their home and workplace environmental factors are not presenting a health hazard.

Changing environmental conditions affect health. Nowadays health of the nervous system is very important for a man, because its disorder cause any disease in the human body, while the disease is the body's response to pathogens that threaten human health.

According to the most well-known definition of health proposed in 1946 by the WHO, health is the physical, mental and social welfare. Therefore, when considering issues of environmental impact on health, you have to take into account those aspects that relate to mental health. Mental Hygiene is an action aimed at mental health. The human psyche is constantly exposed to the incentives that often exceed its adaptability. This causes mental imbalance, which leads to increased state of emotional tension and build-up of internal conflicts.

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<sup>3</sup> Ibidem.

The results of the research cited in the Report of the Institute of Health show that the psychosocial working conditions faced by today's workers carry a serious risk of ailments, diseases and disorders in daily functioning, both at work and at home. They may negatively affect the well-being and health, and consequently affect the level of ability to work.

Directory of mental health risks is very wide, it might be: poor work organization and negative interpersonal relationships, poor management practices, as well as physical factors such as long-term noise. Such factors, threatening to the health in economy based on services and information processing, will gradually endanger workers by: chronic fatigue syndrome, stress, burnout and addiction caused by different types of work (e.g. workaholism). Among the professions that are the most vulnerable to the effects of a deterioration in the condition of the mental health we find: social workers, teachers, medical staff, managers, employees of banks and offices.

### Sustainable development of human health provided in selected documents

The problem of the relationship between human health and the environment has been included in numerous studies, and the results are reflected in publications and certain documents. In 2010, there was held a conference, attended by ministers from 53 countries of the world. The purpose of the meeting was to work out of the draft, which would regulate the issues of health depending on the environment. Recommendations were contained in the Declaration of Parma.

Parma Declaration on Environment and Health is the basic document of the Conference consisting of activities and the commitments to action. The first part of the Declaration is a real statement of activities, in accordance with the priorities and challenges facing the modern world and Europe:

- the impact of climate change on health and the environment,
- health risks of children and vulnerable groups resulting from the impact of harmful environmental factors of life and work, especially with the lack of water and sanitation,
- increasing due to the economic crisis, socio-economic inequalities and lack of equality between men and women in the environment and health,
- risk of non-communicable diseases which can be reduced by appropriate action in the urban areas, transport food safety and living and working environment,

- issues related to exposure to chemicals that accumulate in the body, disrupting the balance of endocrine,
- insufficient environmental resources in some parts of the WHO European Region.

The rest of declaration contains actions:

- striving to strengthen existing mechanisms and structures that ensure effective implementation and promotion of local activities; due to the economic crisis should aim to use partnerships and networks,
- striving to develop, modify and implement legislation on environmental protection and health and to continue reform the health care system, particularly in the countries of the Commonwealth of Independent States and the countries of South-Eastern Europe,
- helping children and youth in the process of turning on the environment and health at national and international level,
- supporting investment in the development of new sustainable and environmentally friendly technologies, enhancing the efficiency of health care services and green jobs,
- encouraging international stakeholders, including financial institutions and the European Commission to offer further scientific, political, financial and technical support, in order to create effective mechanisms and enhance the opportunities for reducing exposure to environmental hazards and the resulting health effects in the European Region,
- asking the WHO European Region, the European Commission, UNECE, UNEP and other partners to strengthen their cooperation in order to ensure progress in the implementation process, the environment and health across the European Region,
- adopting and implementing the Declaration annexed to the Action commitments, objectives and strategies contained in it,
- accepting the approach outlined in the document, the European Environment and Health Process (2010–2016): Institutional assumptions, which recognize the reinforcement of the – political role of the European Environment and Health Committee (EEHMB), checking the implementation process by the Task Force on Environment and Health (EHTF) and the annual submission WHO Regional Office reports and UNECEF,
- organizing VI Ministerial Conference on Environment and Health in 2015 in Moscow.

Commitment to Action is a document of substance, which consists of chapters detailing measures to implement the provisions of the Declaration:

1. Protection of children's health (section comprising four Regional Priority Goals);
2. Protection of health and the environment from climate change;
3. Inclusion of children, young people and other stakeholders;
4. Knowledge and tools for policy development and implementation<sup>4</sup>.

The solution to this situation seems to be not only the implementation of the provisions of Parma, but also the concept of sustainable development.

Sustainable development is a very broad and variously interpreted subject. Representatives of various scientific disciplines and various spheres of life speak about it.

References to the importance of sustainable development for the human health condition can also be found in international documents and legislation. So what is sustainable development and how it can affect the health condition of modern man?

Discussion on the human right to live in an environment that ensures the quality of life in dignity and prosperity began in 1972 during Stockholm Conference dedicated to environmental problems on a global scale. In the same year, there was proclaimed the Club of Rome report "Limits to Growth", which pointed out, *inter alia*, depletion of natural resources, which are the basis for economic growth. The term sustainable development has many definitions at the moment. The first one was formulated in 1987 in the report of the UN World Commission on Environment and Development. The report "Our Common Future", in order to create a sustainable way of life, recommended integration of activities in the regions of the world in three key areas:

- Economic growth and equitable distribution of benefits – sustainable development strives to meet the material needs, as well as the alignment of economic growth in different regions of the globe. Economic development stops to be an aim in itself, and becomes a tool in the fight against poverty, diseases. At the same time it must reduce the negative impact on the environment, through innovation and introduction of new business models aimed at reducing costs.
- Protection of natural resources and the environment – the foundation of sustainable development is to stop the degradation of the environment by protecting resources and their rational use by increasing efficiency through new technologies, and the use of renewable energy sources.
- Social development – the objective of sustainable development is a good quality of life for all people, both the current generation and

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<sup>4</sup> <http://www.srodowiskoazdrowie.pl>, access: 05.12.2014.

the next. People around the world have the right to have the tools and opportunities to shape their own future and fulfillment. Access to water and energy, education, employment, health care at the appropriate level, ability to preserve the cultural and social diversity should be one measure of development. Sustainable development can only be achieved by people who live at the appropriate level, with a sense of security and the impact of their decisions on the environment<sup>5</sup>.

Definition helping to apply the principle of sustainable development into practice in Poland, we find in the Law on Environmental Protection, an Act from 27.04.2001 (*Prawo ochrony środowiska*).

Whenever this Act mentions [...] sustainable development – it means the socio-economic development, which provides an integration of political, economic and social actions, maintaining the natural balance and stability of basic natural processes in order to ensure ability to meet the basic needs of communities or citizens of both the present generation and future generations<sup>6</sup>.

Writing about sustainable development, as a prerequisite of human health condition, we have to mention the role of UNESCO in promoting the Earth Charter – a document outlining the main ethical framework for sustainable development, and considered to be one of the most important educational tools.

32 UNESCO General Conference in 2003, has supported the special resolution recognizing the Earth Charter as one of the most important educational tools for sustainable development. The Charter included, among others, statements that clearly show the current situation of man on the environment:

- The Earth is our home and the home of all living beings [...] Human beings are members of an interdependent community of life.
- Community of the world found itself in a particular moment. Disregarding, at your own risk, we ignore the laws, which govern biosphere. [...] It is becoming clear that fundamental change is needed<sup>7</sup>.

And basic commitment to change the situation. These include the following:

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<sup>5</sup> E. Szadzińska, *Dydaktyczne tropy zrównoważonego rozwoju w edukacji*, Impuls, Kraków 2013, p. 60.

<sup>6</sup> Art. 3 point 50 Act of 27.04.2001, *Prawo ochrony środowiska*, *Law Journal of 2001*, no. 62, item. 627, p. 10.

<sup>7</sup> <http://www.unesco.pl>, access: 01.12.2014.



1. Caring for the Earth, protecting and restoring the diversity, integrity and beauty of the planet's ecosystems. Wherever there is a risk of irreversible or serious damage, we shall take actions to prevent damage.
2. Living in a sustainable way, to promote a model of consumption, production and reproduction, which protects human rights and the regenerative capacity of the Earth.
3. Equal share of the profits from the use of natural resources and a healthy environment among the nations, rich and poor, men and women, between the present and future generations.
4. Not harming an environment of others.
5. Protecting and restoration of places of special ecological, cultural, aesthetic, spiritual and scientific importance<sup>8</sup>.

Among the many environmental factors, one of the most important, determining human health, is water. Water is the source of life, but today it is also one of the major problems of humanity. The main causes of the crisis on the water are related to the pollution of water reservoirs, improper management of water resources, and climate change. A low level of public awareness and political inertia is also responsible for it. In a situation where the health and life of humans is dependent on the quantity and quality of water, it is essential to take a comprehensive educational campaign, amending the existing reality. Such actions are visible in the attempts made by the experts dealing with sustainable development. One of the Millennium Goals, adopted at the Heights in New York and Johannesburg was to halve, by 2015, the proportion of people living without access to clean water and sanitation. These are the people living in the most difficult conditions, often at the same time suffering from malnutrition and incurable diseases. For them, the water has become a luxury, so at the Earth Summit in 2002, it was emphasized that "access to water should be regarded today as one of the basic human rights. The water should not be seen only as a convenience, as it is one of the common public goods".

Four years after that statement, II World Report on Water, was released in early 2006, but it did not bring favorable results:

- 1/5 of the human population has no access to clean water,
- 40 percent of the Earth's population is deprived of sanitation.

The report also pointed out an alarming degree of contamination of water reservoirs on earth, and a lack of investment in infrastructure and human capacity development.

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<sup>8</sup> Ibidem.

In UNESCO programs, water is present in many different contexts: ecosystems, deserts, forests, oceans, or in the context of a purely technical unequal access to it in different regions of the world.

Among the initiatives of the United Nations, to tackle the problems associated with the depletion of fresh, clean water, there was proclaimed the International Decade “Water for Life” for the period 2005–2015. As a result of a joint initiative of the 31 United Nations agencies, year 2013 was dedicated to cooperation in the field of water, according to slogan: “Water, water everywhere, only if the share”. Over the past few decades, water more than twice as likely became an area of cooperation than conflict between people. Despite its huge shortages in some regions of the world, there is no real threat of war over access to water (anywhere in the world), and water reservoirs increasingly provide opportunities for cooperation between the people that use them together or who undertake joint efforts to build tanks or protect it against pollution.

Water management requires an integrated approach and this is the way it is treated in the International Hydrological Programme (IHP), developed for many years by UNESCO. Under this program, actions are being undertaken to maximize the reduction of threats to the water systems of the world, thereby minimizing the incidence of various diseases. In Poland, PAN National Committee on Hydrological Programs is cooperating with IHP program. In these schools, in addition to conducting experimental and theoretical research, there is held an environmental education and seminars and conferences are organized.

Many educational activities of UNESCO is devoted to problems of water. In 2003 *Institute for Education on the Water* was founded in Delft (the Netherlands), educating students from more than 100 developing countries and countries in transition. The Institute also plays a coordinating role for the entire network of institutions cooperating with UNESCO in the field of environmental education on the importance of water for life and health of people around the world.

In environmental education local or regional programs play an important role. In two of them Polish UNESCO associated schools are actively involved. These are:

- Baltic Sea Region Programme (BSP), run for 15 years. Poland was the coordinator and in September 2006, we provided the coordination to Lithuania. The program aims to mobilize students from the Baltic Sea states to take measures for the protection of water resources and the natural environment. Major projects for over 300 schools participating in the Baltic Sea Project are: Water Quality, Air Quality, Rivers, Ecology

of Birds, Observations of the Baltic Coast, Environmental History. The program, which involves: Finland, Sweden, Denmark, Germany, Poland, Lithuania, Latvia, Estonia and Russia is also the exchange of experiences between young people and teachers.

- The program of the Great River Volga (GVRR), developed in years 2004–2007 and studying the impact of excessive industrialization and urbanization on the environment. The idea is to initiate and support joint activities of young people, undertaken for the protection and promotion of the objects of World Heritage and Biosphere Reserves, as well as activities for sustainable development. The aim of GVRR is also to promote intercultural dialogue among young people from participating countries. Schools from 18 countries (through which flows the Volga and states bordering the Baltic, Black and the Caspian Sea) participated. It was attended by students from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russian Federation, Sweden, Bulgaria, Georgia, Romania, Turkey, Ukraine, Azerbaijan, Iran, Kazakhstan, Turkmenistan.

Analyzing the selected activities undertaken worldwide by various international organizations, in the context of the individual, sustainable development can be reduced to the statement: “Think globally, act locally”. This statement relates to our personal responsibility for action or inaction to care about the future of life on Earth. Every man taking everyday decisions affect the realization of the basic assumptions of sustainable development – both while shopping with the principles restricting excessive consumption or choosing a more sustainable transport, as well as during decision making on the shape and the way of development of our closest environment. By taking these actions people not only care about the environment, but also about their own health condition and the health of future generations. The significance of man’s relation to nature and its goods as a determinant of the daily existence of society was noticed by L. Domka:

At the dawn of the new millennium, the world was faced with necessity to take on global challenges of our civilization degrading nature. Many signs indicate that the destruction of natural ecological systems is the greatest danger to the future of the human species and the future of the planet. You can see that anthropopressure in relation to the environment has become a determinant of contemporary social value system that require a radical challenge and rejection. We need a quick and decisive abandonment of many extravagant

aspirations and ignorance towards nature, its overuse and idealizing the power of technology and material welfare [...]”<sup>9</sup>.

Modern man must take into account not only to repair what we have so far destroyed, degraded in the health and life of humans and the Earth, but also to support the personal development of young generations in learning new behaviors and attitudes that promote health and peaceful life in harmony with the environment.

To achieve sustainable development, we need a balanced unit with a balanced personality, healthy families, schools, workplaces, sustainable business and industry, sustainable administration and policy for sustainable development on a global scale.

## Conclusions

To summarize, since the beginning of the human race on Earth natural environment conditioned our existence. The ancients knew of something that modern man has forgotten. The old truth relates to the fact that nature can exist without man, but he did not survive a single day without nature. We need to know that the environment is a universal good. We live in it, it determines our development and we should protect it to keep us healthy. Awareness of the significant impact of environmental goods on the condition of human health results in a continuous search for effective solutions to this problem. The concept of sustainable development, which “[...] is not traditional environmental protection [...] seems to be very interesting. This is definitely and most of all “development”, but conditioned by ecological space, and through the anticipated synergies of the economic, environmental and social aspects – safe and beneficial for humans, the environment and the economy. It is definitely not a “brake” of progress, but its “stimulus”. It is also a way of life and a form of ethics, giving a choice of forms of consumption and production. It is also a “fashion”, because consumers associate organic product with something safe and healthy [...]”<sup>10</sup>.

It is not enough to know assumptions of this concept, it is necessary to properly understand the aspects that really allow activities in the area of personal and public health. To realize the concept of sustainable development (as a condition of good health), an environmental and health education broadly defined, implemented in all habitats of human life, is necessary.

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<sup>9</sup> L. Domka, *Kryzys środowiska a edukacja dla ekorozwoju*, Wydawnictwo UAM, Poznań 1998, p. 7.

<sup>10</sup> <http://www.mos.gov.pl>, access: 10.10.2014.

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