

## **SUSTAINABLE DEVELOPMENT AND THE ENVIRONMENT**

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***Abstract:***

*As a consequence of general economic growth, progress in all areas of economic and social life, the human being came today to have the technical means improved so that consuming huge quantities of renewable and non-renewable natural resources, exploiting the ever increasing and changing the environmental factors nature at a rapid rate. The human being leaves free way harshness of economic disequilibrium with negative effects on quality of life, but also on the evolution of the biosphere, but not require adequate control over his actions and aware.*

*It was created the image that the human being endowed with power and intelligence to dominate modern technology and then to transform nature, placing it so entirely at his service.*

*The modern technology estranges the human being from nature to such an extent that he acts more and more against it, unfortunately contributing to degradation. Thus, nature can be irreversibly affected.*

**Keywords:** sustainable development, environment, environmental protection, technology, ecology.

As a consequence of general economic growth, progress in all areas of economic and social life, the man came today to have the technical means improved so that consuming huge quantities of renewable and non-renewable natural resources, exploiting the ever increasing and changing environmental factors nature at a rapid pace. Man leaves sway harshness of economic imbalances, with negative effects on quality of life, but also on the evolution of the biosphere, but not require adequate control over his actions and aware.

Among scientists, the politicians, the general population, gradually formed the belief that under modern civilization, economic activity requires not only concern the volume and quality of material goods and services by providing a commonly high economic efficiency, but also a growing attention to environmental protection, which is provided basic material growth.

Given a strongly degraded and polluted environment becomes increasingly obvious that the standard of living, even if it is very high, loses all meaning, no longer account the negative impact of the environment on the evolution of the natural phenomena and biological perspective and thereby economic growth itself.

In such circumstances appears increasingly necessary to develop and adopt broad economic policy perspective to find a green strategy materialized in place specific actions to protect the environment, integrated economic development programs, and economic mechanisms social-administration of these programs and in establishing appropriate legislative and institutional framework.

Study of these phenomena becomes necessary that combine harmoniously the basics of the economy with environmental sphere.

The most common definition of sustainable development is undoubtedly that given by the World Commission on Environment and Development (WCED) in its report "Our Common Future", also known as the Brundtland Report: "Sustainable development is development which aims to meet the needs of the present without compromising the ability of future generations to meet their own needs".

Sustainable development aims and tries to find a stable theoretical framework for decision making in any situation in which man finds a report type - environment, be it the environment, the economic environment or social environment.

Although sustainable development was initially meant to be a solution to the ecological crisis caused by intense industrial exploitation of resources and the continued degradation of the environment and seek primarily preservation of environmental quality, now expanded concept of quality of life in its complexity and in economic and socially. The object of sustainable development is currently concern for justice and equity between countries, not only between generations.

Environmental economics, as defined, is a discipline border between ecology and economics that studies the distribution of the world's natural resources and their use consistent with maintaining the ecological balance in nature.<sup>1</sup>

Environmental Economics aims to combine economic and social development with permanent protection of the environment.

Environmental economics must stand against environmentalism narrow, conservative, economic development necessary to preclude the need of contemporary society.

Environmental Economics sets priorities the economic, environmental and so human interests and also the nature integrity coexists harmoniously.

### **Natural resources, environment and economic development**

The study of natural resources essential component environment, are susceptible to a thorough analysis from many points of view, such as growth requirements, the potential environmental factors in perspective, scientific and technological and demographic trends that influence demand and extraction rate, and substitution rate, reducing specific consumption etc.

Energy used by humans in various forms, element for all economic activity, form one of the more important factors of human material civilization. Another essential element that forms the material structure of the economy, however, is the raw materials, minerals and organic. All man-made objects in the production process to meet the different categories of necessities - the physiological, social and spiritual - and everywhere around us as raw material origin subject to processing.

To the man regarded as a complex with determinations biophysical, biological and social, psychological and socio-historic concrete - are many necessities to satisfy that there are many obstacles caused by the environment. In this case, the environment is given a broad meaning, including in this category so both the natural environment and on the artificial (economic, social, cultural and aesthetic), which carries out its entire business man, more rich and more complex. Man defined his versatility with his needs is considered as a cybernetic system. For preserving and developing this system, man carries his whole activity based on information received and responses to variations and uncertainties coming from the environment.

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<sup>1</sup> Iordache, V., Ardelean, F., *Ecology and environment*, Matrix Rom Publishing House, Bucharest, 2007, p.32

Through the information received about the condition, behavior and evolution of the environment, man seeks to provide answers to a number of issues concerning the selection and ordering needs, organizing his whole individual and group activities according to certain priorities, taking into account available resources and the possibility create these material resources, professional, organizational, political and ideological needs. This means that the possibilities to create them are more efficient and diversified as the man through economic and social development, the issue of direct domination of nature.

Both at the individual and at the social groups and classes in different countries are a variety of types and structures needs, as well as significant differences in the levels of their satisfaction.

Therefore, it is necessary that things should be carefully analyzed in order to draw reliable conclusions untrue.

Degree of economic development leaves its mark decisively on the level and structure of desires and necessities practically revealed by actual demand. Necessities, but also to satisfy their desire is original engine that triggers economic development. Between nations and social groups heavy, become the most dynamic precisely those that are driven by strong desires to cross new steps to achieve some needs that increase the amount and diversity.

So we can get consistent explanation of mobility, level and structure of different types of necessities only when they are placed in close correlation with economic development studies. Thus, in a society less developed economically, the needs are less diversified, less volatile, and their share of the principal forms of bio-physiological survival. But as economic development increases, and the volume and variety of products and services increases, human needs are not so closely related bio-physiological life. They gradually pass to the social, scientific, cultural, aesthetic interest.

Besides economic development, another factor that leaves its mark on the structure, volume and directions of development of needs is the nature of production and social relations, class structure, level of culture, representations and conceptions of people on their needs, reflected in the individual and collective aspirations. Indeed, looking more closely physiognomy of society in terms of trends in the structure and volume of needs will emerge their relation to economic and social mechanisms, which all are dominated and enslaved to maximize profit, business processes are intensified to maximum by applying scientific discoveries and technology to increase profits.

Basically this means a high consumption of renewable and non-renewable natural resources and often beyond the power of nature to maintain the balance of ecosystems vital to the future development of the biological system of the human first.

Analysis existence of some differences are still large between countries and social groups in the structure and volume of needs, were the basis for proposals to develop standards for the minimum and the maximum average necessities. To achieve levels required by these standards is proposed to form even economic policy objectives not only in the nation but also of UN bodies. Of course, to achieve the objective of a minimum level of satisfaction of needs in many developing countries, the domestic demand, the introduction of economic and social structures to promote, on the one hand, increasing economic growth, on the other hand, achieving a fair allocation policies.

#### **Relationship between economic development and environment**

Contrast to previous eras when the damage was relatively small economic activities and the nature has enough forces to restore ecological balance in the current situation suddenly changed. Global ecological crisis, which manifests itself in various forms, has become a reality.

A central environmental issue, particularly in developing countries is polluted drinking water. Almost one billion people lack access to clean water around the globe. Over three million people - mostly children - die every year from drinking contaminated water. Water purification requires huge resources, but this is justified in all countries take steps to build water purification systems.

The transition to a market economy, a great responsibility lies with private sector companies.

Environmental damage from the management of the former USSR transformed, according to the findings of experts, agricultural land in a true wilderness. Until the newly formed states will be able to provide people with products and until they become real competitors in agriculture need to pass many years.

Application of pesticides in Moldova was 13 times more intense than the other territories of the former USSR DDT (dichlorodiphenyltrichloroethane-diphenyl-trichloroethane) was banned after being poisoned over 12 million hectares of arable land.

Expenses for purifying soil impregnated with herbicides and settlement of claims brought by industrial pollution are enormous. Earth is threatened by erosion and other hazards facing agriculture and other issues. Following intensive use and misuse of land and other natural resources in certain areas has created a serious environmental situation, significantly decreased agricultural production stability.

The use of natural resources combines a set of transformations and changes in natural resources, characterized by cycles of resources. Distort economic activity fund essential course of natural cycles and ecological crises cause conflict “man and nature”.

In order to stop the environmental deterioration through intense economic activity we need reworking cardinal principles of organization of the farm household.

Expand production in danger of effect „gases” and ultimately our planet overheating, which could have unpredictable ecological consequences. In developed countries, particularly the U.S., allocations for environmental protection increase considerably. Also in the U.S., many eminent scientists have found that if you increase the temperature on Earth, this would be very insignificant in the next hundred years. In June 1992, the International Ecological Forum in Rio de Janeiro was agreed that in case of danger will increase global temperature increase will be taken serious.

In other countries, the air environmental pollution has reached to a threatening level. Because of the fact that hazards move across the globe, the air environmental pollution has a planetary character.<sup>1</sup>

Basic role in air pollution is exhaust from road transport, power plants, industrial enterprises, etc. Auto transport backs 60% of the total volume of pollutants, industry - 17% energy system - 14% waste combustion - 9%. Specific discharges as a result of tons of conventional fuel burning are: carbon monoxide - 395 kg, nitrogen oxide - 20 kg, oil - 34 kg, aldehydes and organic acids - 1.4 kg.

Besides directly affecting human health, environmental hazards come in, and then the agricultural products they make to achieve unchallenged global market, which is very important for agriculture in general.

In cities, road transport is the main factor of toxic discharges into the atmosphere, including those of cancer.

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<sup>1</sup> Ciobotaru, V., Socolescu, A.M., *Pollution and environment*, Economic Publishing House, 2009, p.49

When operating a motor vehicle in steady state, the content of impurities in the exhaust gas is lower than the operating mode of the engine idling, starting and braking regime is characteristic for road transport in the urban cycle operation. Content of harmful substances increases in vehicle operation with a satisfactory adjustment of the fuel system and ignition of the fuel mixture. Every day, 1,000 cars carburetor type engines eliminates about three tons of carbon monoxide, 200-400 kg of other compounds from incomplete combustion of gasoline, 50-150 kg of nitrogen oxide.

Exhaust gases from road transport causes many diseases, such as allergies, upper respiratory mule, angina, tuberculosis, cancer etc.

To reduce the exhaust of harmful substances and maintaining allowable concentration limit established by law, the following methods are used:

1. Using gaseous fuel (H<sub>2</sub>, CH<sub>4</sub> etc.).
2. Combined fuel use.
3. Improved intake tract petrol injection and obtaining necessary fuel mixture.
4. Improving combustion processes (antechamber-flame).
5. Catalytic purification of exhaust gases.

More effective is the combination of catalytic purification with one of the above mentioned methods, excluding hydrogen combustion.

Equipment is outdated carburetors gas purifiers (in cars with external mixture formation systems) and not injection systems.

An effective reduction of harmful content in the exhaust gas components is achieved by using oxidation catalysts for purifying CO, CHX additional intake air to the exhaust tract. But this requires the presence of additional facilities and an air pumping and other combustion installations remained. Reduction of the exhaust gas can be made also through complex catalysts.

In countries like USA, France, Japan successes were achieved in the development of purifiers' gas car. In 1970, the U.S. adopted the clean air law, and in 1975 they set some strict rules for disposal of harmful substances into the atmosphere by petrol engines.

Increased research to develop and implement gas purifiers served in several countries adopting legislation on strict rules on toxic substances contained in exhaust gases from road transport.

There are used advanced technologies to produce catalysts by thermal decomposition method different metal compounds, but this method requires high energy costs and the initial cost is higher salts.

Considering that a number of cars is constantly increasing worldwide, research is needed in developing complex catalyst exhaust gas purification using ceramic honeycomb.

But the restriction to such research is insufficient for a practical solution to this problem. It is necessary to take a number of steps further and put them in practice:

1. Drafting of legislation by ensuring ecological cleansing vehicles, this adding and requirements to limit allowable concentration of harmful substances in the exhaust gases from motor vehicles not only in the countries of Western Europe.
2. Switching to non-ethylated gasoline.
3. Creation of the Diagnostic and branches of road transport in order to check the rules state standards.
4. Ensure control of all cars brought into the country in accordance with the requirements of environmental purity.
5. Organization catalytic gas purifiers produce their installation compulsory automobile in accordance with the regulations.

In some regions, the concentration of chemical elements and impurities in the atmosphere reaches a dangerous level for life. With the “acid rain”, these substances dissolved in the water that falls to the ground water and destroying vegetation infects large territories. With the increasing of number of nuclear power stations also increases the risk substantially air and land accumulation of radioactive substances. An example of this is the fault of the Chernobyl station, which polluted the huge territories Ukraine, Belarus, Moldova, Romania and other countries.

Lately there is danger drilling ozone layer of the planet, which protects living things on Earth from harmful influence of ultraviolet rays. Damage and accumulation of toxic substances in air, water and soil lead to serious illness increase.

All these problems can be solved by stabilizing the balance between human economic activity and the environment namely an optimal balance in the “man-nature”.

Search solutions should be carried out in two directions:



1. First, all global human forces must work together for the purposes of preserving and protecting biological systems still exist, do not allow the destruction of flora and fauna on Earth.

2. Along with protecting biological systems is necessary to develop mechanisms regulating biotech industries.

Mankind must devote more and more income from economic activity to save the life of its main resources - air, water, soil.<sup>1</sup>

Economic and technological results achieved over decades in developed countries have created a robust optimism around the production system and modern technology so that the natural link between economic growth and environmental inter-whether it was forgotten, whether created a false image, that generous nature can dismiss all his wealth which man can derive its sole discretion without any systematic. It also created the image that man endowed with power and intelligence to dominate modern technology and then transform nature, thus putting it all into his service.

This attitude was reflected in the environment full of economics, which also fueled so many generational consciousnesses in that direction. But we have seen thus deepening human alienation from nature, a process that had already begun with the advance towards modern civilization, when man has created and developed an artificial environment more comfortable on account of or in opposition to the natural.

The modern technology alienates man from nature to such an extent that he acts more and more against it, unfortunately contributing to degradation. Thus, nature can be irreversibly affected. The essential problem is not only that of finding an explanation of the origin of such attitudes, but also to make a man a good ally and protector of nature, to seek and build economic and social mechanisms needed to work for environmental protection growth conditions.

In terms of the general manner of subjects treated, it would be appreciated that in this area there are three main formats which are generally dominated by the vision of three professions:

a) Ecologists generally based on extensive studies and concrete facts and phenomena, calls for conservation of the natural environment, often by giving the main solution for slowing or stopping the growth.

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<sup>1</sup> Stefanescu, F. (coord.), *Sustainable development and quality of life*, Oradea University Publishing House, Oradea, 2007, p.23

b) Economists who are based on studies of ecology, but also their own research stress the compatibility between economic growth and environmental conservation, containing not only explanations, but social and economic mechanisms to ensure this compatibility.

c) mathematicians who usually based on assumptions, and concepts to be developed by ecologists or economists, form models to clarify the interrelationships between variables and to draw some trends, including the long term.

But this area requires extensive research, interdisciplinary economists and technologies from different industries and different specialties should work.

### **Conclusions**

The intention is not to present any alternative growth patterns and evolution of the environment, just highlight a few important things, namely:

- There are a number of factors that only a simultaneous existence and they are in close interconnection. According to this principle, everything is connected with every other thing and, as such, producing a pulse or disturbing factor due to their close interconnection takes place sooner or later, a movement or disturbance of other factors or even the entire system;

- Either physical or chemical transformation or by consuming biological in nature nothing is lost, but it only changes the place or form. Therefore, anything from nature, processed or consumed, has to go somewhere. Usually this accumulates large quantities of natural places which they belong and which therefore may produce disturbances and ecosystem factors;

- The nature (physical, chemical and biological) has its laws, which cannot be and must not be violated, but carefully studied, known and understood by the man in all his actions. Human intervention in natural processes must take place not against or disadvantage them, but in close correlation with the processes and laws of nature in order to avoid disturbances or disasters. This does not imply that one should avoid any change of nature. But what is required is to keep these changes within reasonable and acceptable, providing storage and avoiding those processes which, according to the laws of development can lead to sudden, destructive, with large and irreversible damage;

- The natural environment must be integrated into growth models taking into account two essential aspects of his - as a source of natural resources (minerals, biological) needed to carry out business processes and the tank, disposal

of socio-economic processes with a limited capacity to absorb self-healing of these residues and environmental factors.

Such evaluation is important not only to meet the requirements of knowledge, but especially to meet the practical requirements become vital for the evolution of modern human society and especially of the future.

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