

## EARTH – MANKIND BED

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**Abstract.** *After the presentation of the report between the natural environment and the surrounding environment, it is emphasized the human being influence on the terrestrial environment and especially the soil erosion and pollution. At the same time, there are pointed out the natural disasters over the environment and the atmosphere influence over the land health, after which it is mentioned what should be done in order to assure a healthy shelter of mankind.*

**Keywords:** the mankind shelter, natural disasters, healthy atmosphere, healthy land, terrestrial environment, the environment created by man.

### 1. Natural environment and its components

„Natural environment”, namely, air, oceans, seas, lakes, running waters, soil and subsoil and living types these ecosystems create and support is the most common image which ordinary man has when he speaks about environment.

All the natural factors determine living conditions for vegetal and animal world and for its reasonable exponent – man, representing natural environment.

Thus natural environment appears as a complex cybernetic system, divided into three main subsystems (fig.1).

Natural environment has natural physical components

- abiotic elements : air, water, geological substratum, relief, soil.
- biotic elements represent life, organisms. They appear as vegetation and animals depending both on earthy factors and cosmic ones (sun radiation for instance) helping us to understand the implications which can follow some changes either earthy or cosmic ones or both at the same time.
- antropic elements which are introduced by man through his activities.

Environment appears as a reality including not only natural environment, but also human activities and creations, man holding a double position of environment „component” and „consumer”, beneficiary of environment. The whole activity from environment pursues not only reasonable use of resources, but also correlation of territory and locality systematization activity with measures of natural factors protection.

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As a result of more and more accentuated human action, antropised areas occur.

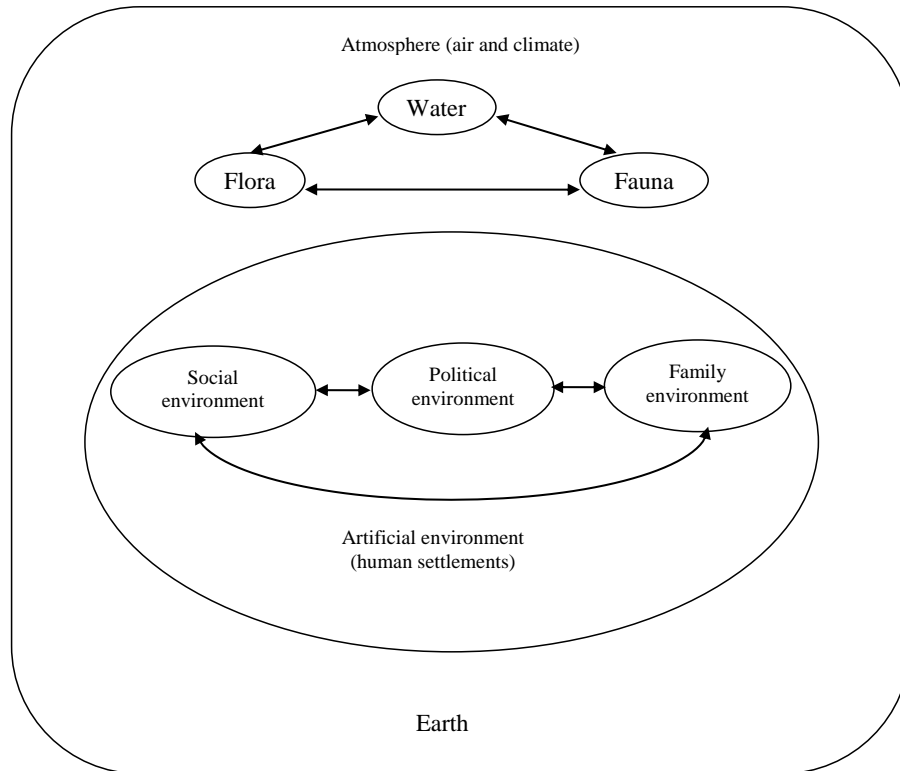


Fig.1 Ratio between natural environment and environment

## 2. Influence of human evolution over earth environment

During Paleolithic, in the region of eastern Africa, within a savanna zone the first human beings appeared (australopithec). One million years later, primitive human being evolved in homo habilis or „skilled man”, which did the first stone tools and shelters as fender. Then Homo erectus („man in right position” discovered the fire (fig.2).

If the first period of prehistory, the Paleolithic lasted about one million years, the next periods being much shorter. During the other periods, men got specialized in some plants collection and some animal species hunting and that is why man was very well integrated in the environment and brings him no damage. In time they succeeded to know factors which influence the plants and animals and on which relied the invention of agriculture and animal breeding. So they cut forests to practice agriculture

(finally leading to soil wearing away), degrade the earth by excessive pasture etc.

As Earth population increased, men acquired more and more improved means to fight with nature. Here are few excesses of man-nature impact which became more obvious in the XXth century.

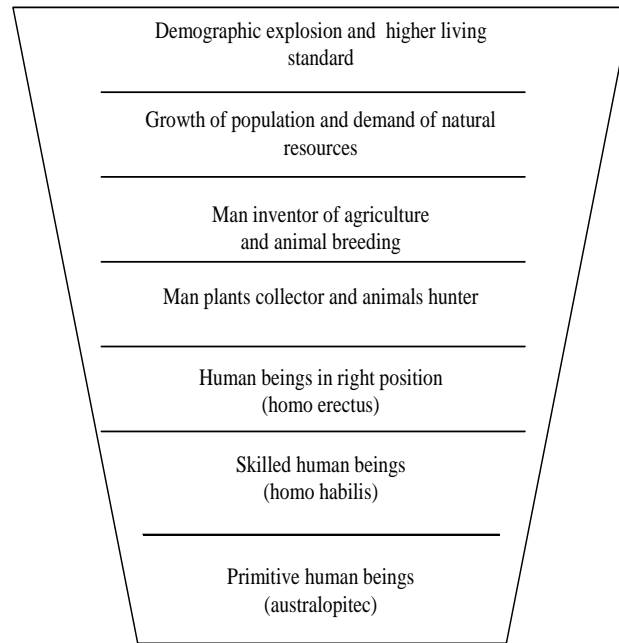


Fig. 2 The influence of human evolution on the terrestrial environment

Population growth nowadays, in which 90 million persons yearly gather to the Earth population, which already exceed 5 billion. Earth population was never so numerous as today, and growth speed, of about 1.7% per year, was not so high. Actual demographic explosion makes pressure over Earth limited natural resources, that is why our society of consumption goes to a more and more accelerated fall of resources.

It can be stated that the rate people consume natural resources of the planet is directly proportional with their living standard (the highest life quality is the higher is the use of several matters). Therefore, demand of resources increases as a result of two main factors: higher number of the planet population and higher living standards both in developed countries and in developing countries.

At the same time with the increase in the Terra population, the need to cultivate the soil increases to produce food. In densely populated regions,

wide areas of fertile land were covered with urban settlements, industrial zones, highways, railways or airports.

### **3. Erosion and pollution - the two big threats of the soil**

Earth quality good for agriculture depends on its administration. Soils need hundreds of years to be created, but can be destroyed in few years because of an inadequate administration. The two big threats for soils are pollution and erosion.

Soil erosion is the most severe type of soil degradation. It is caused by inadequate use and should not be interpreted as natural erosion.

Natural erosion is a slowly process which cannot be stopped. At the same time with this natural wear, the new soil is created. Scientists estimated that erosion duration and natural removal of one sq. m. of land was about 30.000 years.

But inadequate administration of lands can accelerate this process so that high areas of fertile land could be degraded in few decades. In some developing countries, such as Columbia in South America, Lesotho, Malawi, the situation is very bad. In these countries, bad use destroyed over 75% of agricultural area. Experts estimated that at the beginning of the nineties, each year in the world a land area was eroded equivalent with the territory of England and Wales together.

Soil erosion takes place on the lands cultivated or pastured too intensive. Soil over called on occurs when certain plants are cultivated each year, but fertilization is not done and nutritive substances are not reintroduced in the soil. Intensive cultivation reduces land fertilization and causes the decrease of production per hectare. Pasture deterioration takes places if men breed more animals in that area. High number of animals consume the vegetation at a quicker rate than the rate of its natural regeneration, leaving behind an empty land.

Soil erosion takes place in two stages, in the first one land balls are broken in separate particles. In the second stage they are removed by running waters and by wind.

Soil pollution is caused by long run use of fertilizers, which can diminish bacteria capacity to decompose organic substances and create nutritive substances necessary for the plants. Pesticides damage both bacteria and other microorganisms useful to the soil. Culture watering with fertilizers or insecticides increases short run agricultural production, but on long run these chemical agents can destroy bacteria and other useful organisms.

Soils can be contaminated following an accident as the explosion produced in 1986 at Cernobal thermo- nuclear station, near Kiev in ex

Soviet Union. Following the explosion radioactive substances were released in the atmosphere, which finally reached the soil. Radioactive particles were carried by wind over big areas of land, including north part of Scandinavian Peninsula and Wales. Animals contaminated with radioactive substances were slaughtered.

In many countries, industrial waste are spread on the Earth surface and noxious metal particles killed bacteria in the soil. Aluminum is a noxious metal and is majority component of clay minerals. Usually they are found as chemical components which do not damage bacteria or plants. Acid rain releases aluminum from clay minerals, endangering the life of microorganisms and cultivated plants. Rain becomes acid when is polluted by chemical components eliminated by motor vehicles, factories and technical installations.

#### **4. Natural disasters – other threats of land environment**

Nowadays, we find out often about natural disasters taking place in various zones of the world . In few minutes they can destroy everything. For what is used gold and richness then? We also hear about propagated fires on extended zones, coming out of the blue.

Another reason of getting worried is that of earthquakes. People are afraid of them and ask themselves which is the cause of their production? They believe that this is nature, exposed to danger.

**Water** disaster is produced by people greed. So flood occurs .

**Fire** disaster comes from aggressive human being. Let us remind about any war and we realize that all these mean anger accumulation.

**Wind** disaster (for instance, hurricanes) comes from people ignorance. We should understand that these effects do not occur in a day or two. They are result of a longer period of time.

Therefore, disasters are result of human behavior. If people live in harmony, then nature events can suggest modalities to prevent or avoid disasters. Results are not visible because researches are not directed to what it should be.

Ways to avoid disasters are at our disposal. We can state you really live when you live in harmony with nature, yourself and your people.

#### **5. Healthy earth with healthy atmosphere**

Air we breath is part of atmosphere, namely of mixture of gas covering the globe. This mixture of gas provides life on Earth and protects us from bad sun rays.

Atmosphere is kept by gravitation, so that it cannot be dispersed in the cosmic space. This „ gas mantle”, thick of about 500 km protects us also from „rain” of meteorites flying in the space.

Each day, millions of people cross atmosphere with various flight crafts, from balloons in supersonic plains. Spacemen pass through atmosphere when they go to cosmos.

Atmosphere includes a mixture of about 10 various gas, most of its nitrogen (78%) and oxygen (21%). This 1% rest is majority argon, carbon dioxide, helium and neon. All these are neuter gas, namely do not react with other substances. It also contains polluting such as some noxious gas, smoke, salt, volcano ash etc. Atmosphere is in danger because natural balance of atmospheric gas kept during millions of years, is threat now by human activity. These dangers would be the greenhouse effect, global heating, air pollution, thinner ozone stratum and acid rains.

In the last 200 years, global industrialization disordered the gas ratio needed for atmospheric balance. Burning coal and methane gas determined the creation of huge quantities of carbon dioxide and other gas, especially when at the end of the last century, the car appeared .

Development of agriculture determined accumulation of big quantities of methane and nitrogen oxides in the atmosphere.

Gas already existent in the atmosphere should retain heat produced by sun rays reflected from the Earth surface. Without it, Earth will be so cold, freezing oceans and all beings will die.

When because of pollution the ratio of gas called “greenhouse gas” increases, too much heat is retained and the whole earth becomes hotter and hotter. That is why in our century, global average temperature increased by half of degree. Scientists think that this rise of temperature will continue, and by all expectations, until the middle of the next century will reach 1.5 – 4.5°C.

Following some estimations, at present over one billion people (about the fifth part of the Earth population) inspire strongly polluted air, especially carbon monoxide and sulphur dioxide, resulted from industrial processes. That is why, number of those who suffer of thoracic-lung affections is continuously increasing.

Similarly, the frequency of skin cancer cases are increasing. The reason is the sick ozone stratum, which does not retain noxious ultraviolet radiations.

The ozone stratum in the atmosphere protects us retaining the sun ultraviolet rays. Because at present, more and more are used chlorine fluorine hydrocarbons (freon) in flacons with aerosol, refrigerators,

detergents etc., these gas reached the air in higher quantities going up, decomposing, attacking and destroying the ozone stratum.

That effect was noticed for the first time in 1985 by scientists who worked in the Antarctic, when a hole appeared in the ozone stratum.

Researchers were worried that ozone stratum could rarefy in other parts of the Earth too, increasing the level of noxious radiations. Unfortunately, ten years later in 1995 it was noticed that above the Antarctic and North Europe holes appeared in the ozone stratum.

Something is sure that at present we do not breath clean air. Freons were taken out of industrial products and were replaced with other substances.

Atmosphere is in danger, consequently the whole life is in danger. It is necessary a severe control and radical measures to make sure the future of atmosphere.

## **6. What is to be done?**

Nowadays, attention is directed more and more to environment problems; many governments take into account „green” topics. In the whole world, keeping the energy resources is a severe problem. If we use less electric energy and we drive less the car, we could reduce the quantity of organic raw materials used to produce electric energy and fuel.

In numerous countries, wind and sun energy are used as alternative source. A lot of time will pass until they replace continuously organic raw materials.

Trees as other plants change carbon dioxide into oxygen, playing an important part in keeping the ratio of „greenhouse gas”.

In South America, Equatorial forests are destroyed on huge zones, exploiting or changing them into pastures. Destruction of millions of square km of forests resulted in the reduction of oxygen quantity reaching the atmosphere, on the contrary more carbon dioxide is accumulated, retaining the heat.

The whole world started campaigns which tried to persuade governments to give up the destruction of Equatorial forests. Population contributes to these campaigns, namely does not buy products of tropical wood, thus reducing the demand.

Freons were taken out of industrial processes, as a result of pressure from public opinion, being replaced with other substances.

As conclusion, it is necessary to take care of the EARTH as something very important, until it is not too late. On the contrary, this huge fruit thrown in the space which cannot grow proportionally with our needs, this unique immortal life spring, this house of our spirit and love, this old giant

with rich forests and herbs in which human bed was settled for millions of years, can become its sarcophagus.

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