



Review

Pollution effects upon the environment degradation

DUMITRAȘ Adelina*

*University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Horticulture, Mănăștur 3-5,
400372 Cluj-Napoca, Romania*

Received 6 October 2008; received in revised form 28 October 2008; accepted 11 November 2008
Available online 10 December 2008

Abstract

Environment pollution has become a main issue of newer days, especially for its importance in the civilization development. The human kind and the environment must be looked as inseparable entities. Generically common used factors of the environment as (air, soil, water) can be modified in their structure after the human usage. This is a prior way for accomplishment of the pollution, as effect of some physiological effects or human kind activities, animals activities, which are involving releases of residues in the environment. Once with the accomplishment of the scientifically progress the quantity and the nature of residues has changed dramatically. In the past decades, the processes regarding environment degradation lead to worrying levels, the quantity of polluting agents reaching numbers that overcomes any type of imagination. Not at last, removing the pollution effects stays in the capacity of correcting the errors that are creating it.

Key words: pollution, sources of pollution, biodiversity, environment, residues

1. Introduction

The environment pollution has become one of the most discussed problems of newer days.

In the past time, when the population density was lower and the usage of natural products where the mainly aspects of consumption, didn't differentiate the human life kind by the simple way of living when weren't produce so many waste.

Once with the development of science, the quantity and the nature of the products used by the human kind was fundamentally changed. The degradation process of the environment factors had a rapid development, the quantity of pollutants reaching numbers that overcome any kind of imagination. Confronting the pollution stays in our capacity for resolving the problems that are generating it.

Extreme decisions must be made from the first time when the harm is seen, because the technical and scientific ways existent nowadays are sufficient for resolving the problem of pollution.

The general notice of environment mustn't be mistaken with the definition of the nature, which is anterior, and has a slightly different content.

The definition of the environment can be looked as a complex system but strongly linked, composed by a large number of elements and links with its capacity to self regulate in with the active factor is represented by the human kind.

Recent time a definition related with the environment is pollution which is acting like a continuous threat against the integrity of the environment. Pollution represents mainly the price that the human kind is paying for the benefits of modern technology. What is called in

* Corresponding author.
Tel.: 0040 264 596384; Fax: 0040 264 593792
e-mail: adelina.dumitras@yahoo.com

nower day's pollution is the end of a process that started once with the first construction of the human community who at certain period of time become a threat for the environment. The content of the environment represents a link between natural elements dynamically correlated.

This element can be categorized in three main compounds:

- primer compounds - a-biotic background;
- derived compounds - developed with the help of the primer compounds, representing the biotic environment;
- entropic compounds - introduced by the human kind through constant activities.

2. Pollution sources

The environment pollution has reached her threat on a global scale, being on the verge of attacking the human kind and its vital space needed for living. Beyond the borders of nature self defense, all the polluting agents are spreading quickly in the air, water, soil generating, developing and spreading one of the biggest threats for the modern civilization.

1. *Latent sources of pollution.* In the present time are numerous sources of pollution like: volcanoes, desert storms, ozone, winds, subtenant waters, and in the future time once with the human kind development it is possible to appear other sources of pollution not only on the earth but also in the cosmic space. The ozone is a dangerous substance for the human kind even if its concentration is very small. In the troposphere where its concentration is very small this substance isn't harmful for the animals or the human kind. In the stratosphere the presence of ozone is dangerous due to the chemical reaction between oxygen and the ultraviolet radiation.

In the year 1985, during the Australian spring, has been observed a terrible decaying of the ozone layer above Antarctica, witch resulted in the formation of „wholes” that speeded on a surface of 40% till 50% between 1985 and 1987. This situation has happened due to the meteorological conditions: in the winter time the stratosphere above this region is isolated by some powerful winds; in this situation the appearance of ice particles that favorite's reaction that lead to the disappearance of the ozone layer. The air is the main vector for many types of pollution agents that are spread very quickly on the earth surface. Regarding the mentioned above aspect, dust can bloke the view, decays the breathing and consists the number one enemy of cleaning. Many historical monuments have been destroyed

by the dust movement blownd by the wind. Recent studies showed tat in every year the atmosphere caries over 30 million tons of dust.

The freatic waters that stayed in pronounced contact with different types of minerals or salt are enriched with impurities or even toxic substances Many times are polluted the potable layers of water needed for the human existence. Atmospherically ionization, the surpluses of positive or negative electrical state can be inhaled by the human body leading for the beginning of severe enzymatic reactions that overloads the ill human kinds.

2. *Human sources of pollution.* The human kind, looked as a living organism, produces waste during its existence. During the industrial activities of the human kind result waste as: cloths, furniture, detergents, cosmetic products, chemical products for cleaning and others. Many kind of these waste are biodegradable and others are directly looked as toxic waste for the environment.

Percentual, the quantity of the solid waste produced by the human activity are: 55% paper, 9% metallic waste, 14% food waste, 5% textile waste, 4% wood waste, 9% glass waste, 1% plastic waste, 3 % different waste.

O supplementary source of pollution is represented by the heating sources referring to the coal reserves, petroleum and gases that are producing large amounts of smoke, ashes, and gases. Another polluting agent is represented by the pathogen bacteria's that are spread by the waste waters.

For a possible forecast it is important not only to know the actual state of the population but also its tendency. Researchers forecast that the volume of the human waste will grown higher that their weight, because the role that will play the products packed in paper or glass. It is estimated that the human waste/capita will rise with: 1,5-2 kg paper waste, 0,5-0,7 kg plastic waste, 0,6 kg glass waste, 3-5 % furniture waste from the existent waste.

3. *Agriculture, forestry and animal science as sources for pollution.* Paradox all the economy sectors of the human activity witch are related with the environment are in the same time sources of pollution. Agriculture can be looked as a pollution source through: soil degradation, erosion of soils through agricultural activities, soil compactation, widely use of pesticides that are distorting the useful insect fauna once with the pest, excess utilization of chemical fertilizers.

From the researchers point of view from the total arable surface of our country only 30 % is represented by soils with a potential level of fertility, the rest being different state of decay. From the 5 millions ha of terrains affected by

erosion only half have been worked anti-erosion conducted for producing positive yields Through the erosion process annually we lost 150 millions tons of soil, from witch 1,5 millions tons is represented by humus. Forest cut offs the irrational usage of the agricultural terrains have a negative impact upon the leaks of water on the versants, producing high erosion processes.

The forest found of our country is 6,4 million hectares witch presents a powerful imbalance, mostly represented by the young forests, and the segment of old forest over 80 years old (witch can be cut off) represents a deficit of 500.000 ha leading to lack of wood and derived components from wood.

As for the animal science, excess feeding of the animals destroys the vegetation witch is in development, being a barrier for the development of young forests The animal husbandry units can put serious problems regarding the pollution of the environment with animal manure. In the animal science sector, beside insecticides are used and other chemical substances that have unwanted side effects. These are the substances that influence the production in the animal husbandry units. This kind of substances is harmful because they are released by animal dejection and have been observed in the drinkable water of the animals.

In the organization of the modern agriculture a key role is played by the proper terrain arrangements and especially the proper management of water. Digs and irrigation channels modified the hydrological climate of the area. In this situation can prevail good aspects (yield increase) or bad aspects (salt pollution).

Irrigations played a key role in the development of ancient civilizations. In the present time are irrigated over 500 mil. of ha, fifty times higher then the surfaces recorded in 1800.

4. *Radioactive pollution* is a special form of pollution due to the emission in space of some beams capable to product physical effects, chemical effects or biological effects upon the living organisms. On earth exists a global fond of radiations witch is supported by the living organisms due to adaptation? Radiations are spontaneous emissions or permanent ones produced by atomically disintegration. In the year 1988 existed in world 385 nuclear power plants with an installed power of 400.000 MW, reaching 3800 de reactors. These reactors produced 1988 15% of the total amount of energy and in the year 1990 produced 18-20%. On country level, in France the nuclear power plants prevailed 65% of the total installed power, in Finland, Swedish, Switzerland over 40%, in USA over 14% (witch

represents over 30% from the global energy produced).

Once with the development of the human kind society we were conducted to new sources or radiations. So, medical investigations, radiographies put the human kind to severe risks of irradiation. Even television sets produce radiations.

Sources of ionized radiation can be split in two categories:

- controlled sources: scientifically particle accelerators, X rays generators, household utilities; nuclear reactions utilize for science proposes;

- uncontrolled sources: radioactive waste (from the research activity and the economical activity); radioactive falls (fall-out).

The irradiation pollution effects are obtained in atmosphere, in water, on soil influencing living organisms. The effects of this type of pollution can be: direct - genetically mutations, indirect (when the biological structure isn't modified, but the environment where is placed its modified)

Generally, the nocive effect of radiations depends by the type of radiation, by the energy of radiation and its presence conducting to:

- short time effects, after a pronounced irradiation (specific diseases, death);

- long time effects, week accumulation of irradiation (improves the risk of cancer);

- genetically effects, witch are observed at the child of the irradiated parents

The main source of irradiation pollution is represented by military nuclear experiments (prohibited since 1963) and exploitation of the nuclear power plants. A series of nuclear accidents already prevailed (Three Miles Island - USA, in 1979, Chernobyl - Ukraine, in 1986) witch sensibilized the public opinion and the scientifically group's witch analized the risks of irradiation pollution. After the Chernobyl accident has been admitted that our country received a supplementary dose of irradiation equal with the natural one.

But the human kind activities haven't the ability of usage different sources of energy, being possible that this kind of energy to be used for a long period of time from now.

5. *Sound Pollution.* Magnetic waves, represented by trepidations, sounds, infrasound and vibrations pollute the urban environment. The noise can be characterized by: intensity, last, and the frequency of component sounds. The sound intensity is expressed in Beli, but for practical reasons it is expressed in decibels, dB.

As for the lasting of the sound, the nocive effect of the sound is directly proportional with

it, in situation that overcomes some supportable limits can produce a dangerous psychosis. The frequency of sounds has its importance because not all the frequency heard by the human ear is harmful for the human kind.

Generally sound effects are from the beginning looked as inutile, unwanted, unpleasant or even harmful (car engines, construction machinery etc.). Infrasound conduct in some cases to mental disorders, reducing the power to work or to concentrate. The highest levels of noise are confronted in industrial halls. Sources of noise in the urbanized places is the rush our traffic which is raising constantly.

In order to reduce the level of noise have been stabilized some norms or laws for the noise level. For example 90 dB in industrial halls, 50 dB in the urban area, 45 dB in the recreation area (parks, hospitals, shelters).

There can be made some practical solution to reduce the noise effect. In the industry sector besides (antiphonic materials) it is recommended to use the isolation of the machinery that produces noise with phonoabsorbant materials (rubber tapes, azbest), usage of sound protective screens (bark, different types of polyesters). To all of these aspects we can add the design of silenced household utilities and not at least the education principle for creating the „silent environment” for the person near you.

3. Conclusions

So what is to be done? Slowly, difficult, but inevitable the idea that the environment is a global issue must be looked on a global scale, and hoping that be solved.

This aspect can be done without constant efforts from all the well developed countries.

There is a consent, a fragile one, that shows that the existence of the less developed countries can't be made without the help of the well developed countries. As a practical expression of this reality, 25 well developed countries have signed an agreement in November 1990 to create an powerful instrument called: *“The Global Environment Facility”* (GEF).

With a subscribed capital of 1.5 milliards of dollars, GEF keeps its efforts upon 4 main areas:

- ozone layer protection;
- limitation of the greenhouse effect;
- biodiversity protection (genetically found);
- protection of the international waters.

In the present time, but also in the future time the human kind obligation is for balancing and controlling the quality of the environment for each compound and on its ensemble. Maybe sometimes from now each element and compound of the environment will be integrated *“in a world of equilibrium and harmony”*.

Great will remain the words of Albert Schweitzer (Nobel Prize winner for peace - philosopher, theologian and missionary for the human rights and environment protection in Africa) *“The human kind has lost its capacity for forecast and anticipate. Will end by destroying the entire planet”*.

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